STANDARDIZATION

Formerly Industrial Standardization

News Magazine of the American Standards Association, Incorporated

American Standards Association

Incorporated

Officers

THOMAS D. JOLLY, President
H. S. OSBORNE, Vice-President
HOWARD COONLEY, Chairman, Executive Committee
VICE-ADMIRAL G. F. HUSSEY, JR, USN (Ret), Secretary
CYRIL AINSWORTH, Asst Secretary and Technical Director

Consultant— P. G. AGNEW

Board of Directors

DONALD ARMSTRONG, President, U. S. Pipe & Foundry Co—Cast Iron Pipe Research Assn
ROBERT I. CATLIN, Vice-President, Aetna Casualty and Surety Co—Nat Safety Council
RICHARD A. COLGAN, JR, Exec Vice-President, Nat Lumber Mfrs Assn—Nat Lumber Mfrs Assn
CLARENCE L. COLLENS, Chairman of the Board, Reliance Elec and Engg Co—Nat Elec Mfrs Assn
*HOWARD COONLEY, Director, Walworth Co—Mfrs Stdzn Soc of the Valve & Fittings Industry
LESTER S. COREY, President & General Manager, Utah Construction Co—Member-at-Large
E.H. EACKER, President, Boston Consolidated Gas Co—Amer Gas Assn
*R.E. GAY, President, Bristol Brass Corp—Copper and Brass Research Assn
J.H. HUNT, Director, New Devices Section, Gen Motors Corp—Soc of Automotive Engrs
*THOMAS D. JOLLY, Vice-President, Aluminum Co. of America—President, ASA
R. OAKLEY KENNEDY, Formerly Vice-President, Cluett, Peabody and Co, Inc—Member-at-Large
*FREDERICK R. LACK, Vice-President, Western Elec Co, Inc—Past President, ASA
J.H. McELHINNEY, Vice-President, Wheeling Steel Corp—Amer Iron & Steel Inst
CAROL WILLIS MOFFETT—Member-at-Large
HAROLD H. MORGAN, Vice-President and Chief Engr, Robert W. Hunt Co—Amer Soc for Testing Materials
*H.S. OSBORNE, Chief Engr, Amer Tel & Tel Co—Vice-President, ASA
CURTIS W. PIERCE, President, Factory Ins Assn—Fire Protection Group
AUGUSTE G. PRATT, Chairman of Board, The Babcock & Wilcox Co—Amer Soc of Mech Engrs
ROBERT A. SEIDEL, Vice-President and Comptroller, W. T. Grant Co—Nat Retail Dry Goods Assn
P.M. SHOEMAKER, Vice-President, Delaware, Lackawanna & Western Railroad—Assn of Amer Railroads
JOHN R. SUMAN, Vice-President and Director, Esso Standard Oil Co.—Amer Petroleum Inst
W. C. WAGNER, Exec Dept, Philadelphia Elec Co—Chairman, ASA Standards Council

*Members of the Executive Committee

Standards Council

W. C. WAGNER, Exec Dept, Philadelphia Elec Co, Chairman
J. R. TOWNSEND, Bell Tel Labs, Vice-Chairman

Chairmen of Correlating Committees

BUILDING—Theodore I. Coe, Technical Secretary, Amer Inst of Architects, Dept of Education and Research
CONSUMER—Robert A. Seidel, Vice-President and Comptroller, W. T. Grant Co, New York
ELECTRICAL—C. R. Harte, Connecticut Company, New Haven, Conn.
HIGHWAY—S. J. Williams, Asst to Pres, Nat Safety Council, Chicago, Ill.
MECHANICAL—F. T. Ward, Wilton, Conn.
MINING—Lucien Eaton, Consulting Engineer, Milton, Massachusetts
SAFETY—Henry L. Miner, Manager, Safety and Fire Prevention Division, E. I. duPont de Nemours & Company, Inc

ASA Member-Bodies

Air Conditioning & Refrigerating Machinery Assn
Aluminum Assn
Amer Gas Assn
Amer Home Economics Assn
Amer Inst of Elec Engrs
Amer Inst of Steel Construction, Inc
Amer Iron & Steel Inst
Amer Ladder Inst
Amer Petroleum Inst
Amer Soc of Bakery Engrs
Amer Soc of Civil Engrs
Amer Soc of Mech Engrs
Amer Soc for Testing Materials
Amer Soc of Tool Engrs, Inc
Amer Water Works Assn
Anti-Friction Bearing Mfrs Assn, Inc
Asbestos Cement Products Assn
Associated Gen Contractors of Amer, Inc
Assn of Amer Railroads
Assn of Casualty and Surety Cos, Accident Prevention Dept
Automobile Mfrs Assn
Business Forms Inst
Cast Iron Pipe Research Assn
Conveyor Equipment Mfrs Assn
Copper & Brass Research Assn
Elec Light and Power Group:
  Assn of Edison Illum Cos
  Edison Elec Inst
Fire Protection Group:
  Associated Factory Mutual Fire Ins Cos
  Nat Bd of Fire Underwriters
  Nat Fire Protection Assn
  Underwriters' Labs, Inc
Foundry Equipment Mfrs Assn
Gas Appliance Mfrs Assn
Heating, Piping and Air Conditioning Contractors Nat Assn
Industrial Fasteners Institute
Inst of Radio Engrs
Limited Price Variety Stores Assn Inc
Mfrs Stdzn Soc of the Valve and Fittings Industry
Metal Cutting Tool Inst
Motion Picture Research Council, Inc
Nat Aircraft Stds Com
Nat Assn of Hosiery Mfrs
Nat Assn of Mutual Casualty Cos
National Coal Assn
Nat Elec Mfrs Assn
Nat Lumber Mfrs Assn
Nat Machine Tool Builders' Assn
Nat Office Management Assn
Nat Paint, Varnish and Lacquer Assn, Inc
Nat Retail Dry Goods Assn
Nat Safety Council
Outdoor Advertising Assn of Amer, Inc
Oxychloride Cement Assn
Photographic Mfrs Group:
  Ansco Div of Gen Aniline & Film Corp
  Eastman Kodak Co
  E. I. du Pont de Nemours & Co, Photo Products Dept
Portland Cement Assn
Radio Mfrs Assn
Screw Industry Stds Com:
  Machine Screw Nut Bur
  Sheet Metal Screw Statistics Service
  U.S. Cap Screw Service Bur
  U.S. Machine Screw Service Bur
  U.S. Wood Screw Service Bur
Soc of Automotive Engrs, Inc
Soc of Motion Picture Engrs
Structural Clay Products Inst
Telephone Group:
  Bell Tel System
  U.S. Independent Tel Assn

Associate Members

Acoustical Soc of Amer
Amer Associated Insurance Cos
Amer Assn of Textile Chemists and Colorists
Amer Gear Mfrs Assn
Amer Hotel Assn
Amer Inst of Architects
Amer Inst of Laundering
Amer Soc of Heating & Ventilating Engrs
Amer Soc of Lubrication Engrs
Amer Soc of Refrigerating Engrs
Amer Transit Assn
Amer Trucking Assn, Inc
Amer Welding Soc
Assn of Consulting Management Engrs, Inc
Assn of Iron and Steel Engrs
Compressed Gas Assn, Inc
Douglas Fir Plywood Assn
Grinding Wheel Inst
Gypsum Assn
Heat Exchange Inst
Illuminating Engg Soc
Industrial Safety Equip. Assn
Internat Acetylene Assn
Marble Inst of Amer
Metal Lath Mfrs Assn
Metal Window Inst
Nat Assn of Finishers of Textile Fabrics
Nat Assn of Wool Mfrs
Nat Elevator Mfg Industry, Inc
Nat Federation of Textiles, Inc
Nat Lime Assn
Photographic Soc of Amer, Inc
Red Cedar Shingle Bur
Scientific Apparatus Makers of Amer
Textile Color Card Assn of the U.S., Inc
Textile Distributors Inst, Inc
Veneer Assn

Company Members—More than 2400 companies hold membership either directly or by group arrangement through their respective trade associations.

Marginal Notes

What Standardization Is Not—

Usually an editor avoids a negative approach like the plague. But when H. R. Terhune, secretary of the Standards Engineers Society, called our attention to Mr McElroy's definition of what standardization is — by saying what it is not—he was so enthusiastic about it that we were convinced you would be, too. He told us that members of his Society who heard the speech were delighted with the breezy and unusual approach to what sometimes becomes a rather "stuffy" subject. We hope you will find it interesting and helpful — and that you will let us know what you think about it.

Stretching Rubber Rules to Meet 1949 Needs —

Everyone knows how important rubber was during the war and what unusual developments took place in the industry. But for some reason we hadn't visualized the far-reaching effects of these changes until we talked to Mr. Beck, supervisor of safety for the U. S. Rubber Company (see his article about the new safety code for the rubber industry, page 256). His description of the huge new machines used for rolling out rubber and the high speed at which they operate dramatized for us the problem the industry faces in assuring safe conditions for workmen.

Pan-American Group Nears Formation—

International economic crises, in the headlines during the past few months, can be felt in the background of the news item on page 267 about organization of a Pan-American Standards Committee. Members of the American Standards Association will be asked to vote at the ASA annual meeting

on whether the charter proposed by representatives of seven American countries should be adopted. Closer coordination of standards used in all of the American countries would help in cutting down some of the barriers that interfere with easy exchange of goods throughout the hemisphere.

Steel Designations—

American industrial groups seem to be unanimous in their opinion that the system of designations for materials proposed by Mr Abegg of Switzerland is not appropriate for consideration in the United States. Some of the comments received are published on pages 260, 261, and 262. In the meantime, the Swiss standards association urges us to send comments from United States groups since the proposed system has not yet been approved and changes can still be made.

Your Annual Meeting

Again this year at the ASA annual meeting you can meet to exchange experiences and ideas. You can take part in discussions on company practices on national standards and on international cooperation. Members of the Standards Council and Board of Directors will want to take advantage of this first opportunity to tell each other face to face what they think of the way things are going. We look forward to seeing you at the Waldorf.

Our Front Cover

Tons of rubber are compounded with chemicals on huge mills to make tires for passenger cars and other rubber products. Although this picture shows a miniature mill used in a rubber testing laboratory (not covered by the American Standard safety code), the process is the same as that used in huge commercial mills that carry as much as 600 lb of rubber in a single batch.—United States Rubber Company photo.

Opinions expressed by authors in STANDARDIZATION *are not necessarily those of the American Standards Association.*

Vol. 20 No. 10 Standardization Oct. 1949

Published Monthly by AMERICAN STANDARDS ASSOCIATION INCORPORATED 70 E. 45th St., N. Y. 17

Standardization is dynamic, not static. It means not to stand still, but to move forward together.

In This Issue

Definition—Standardization—

What Standardization Is Not. *By P. K. McElroy* 253

Comments from American Industry—

Steel Designations 260

Industrial Safety—

Stretching Rubber Rules to Meet 1949 Needs *By Ernest W. Beck* 256
Safety for Young Workers Under Labor Standards Act 263

For Engineering Literature—

A Universal Language—Letter Symbols for Electrical Quantities *By Edward Bennett* 264

Building—

Many Materials Now in Standard Size and Dimensions 258
Call for Information on Modular Coordination 263

For International Cooperation—

Pan-American Group Nears Formation 267
Schiesser, Switzerland, Named New President of IEC 268
Unified Screw Thread Form Wins International Approval 269
Internationally Speaking, ISO News 277

From Other Countries—

Certification and Labeling Planned by Brazil 266
Standards from Other Countries 272

From Associations and Technical Societies—

Dessicant Standards Committee Formed by Refrigerating Engineers 255
Bakery Engineers Society Active 263
Committee to Study Ink Testing Methods 265

Book Reviews 270

News Briefs 274

American Standards Association—

ASA Annual Meeting October 11-14 259
Wilson Compton, ASA Meeting Speaker 259
New Procedure for Naming ASA Correlating Committee Officers 271
ASA President Given Honorary Doctorate 277

ASA Standards Activities—

Status of Standards as of September 1, 1949 278
What's Happening on Projects 279

ASA
Reg. U. S. Pat. Off.

Ruth E. Mason, Editor
Rita Maza, Assistant Editor Dollie Carpenter, Production Editor
Advertising Representatives—Woolf & Elofson, 70 E. 45th St., New York 17, N.Y.

Single copy, 35c. $4.00 per year (foreign $5.00). Schools and libraries $3.00 (foreign $4.00).

This publication is indexed in the Engineering Index and the Industrial Arts Index.

Re-entered as second class matter Jan. 11, 1949, at the P.O., New York, N. Y., under the Act of March 3, 1879.

HOW AMERICAN STANDARDS ARE DEVELOPED

SECTIONAL COMMITTEE METHOD

A GROUP OR COMPANY REQUESTS STANDARD

JOB AUTHORIZED BY CORRELATING COMMITTEE SPONSOR APPOINTED

TECHNICAL COMMITTEE FORMED

MEMBERS APPOINTED BY INTERESTED GROUPS

SUBCOMMITTEES DRAFT STANDARD

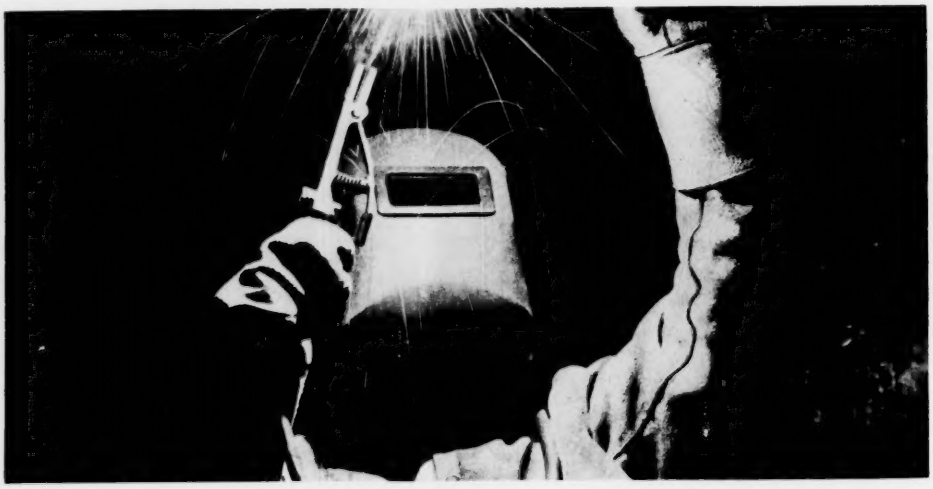
SPONSOR DISTRIBUTES FOR TRIAL AND CRITICISM

COMMITTEE REDRAFTS STANDARD

COMMITTEE VOTES FOR STANDARD SPONSOR SUBMITS STANDARD TO ASA

ASA COUNCIL APPROVES STANDARD

STANDARD PUBLISHED FOR USE



What Standardization Is—All with a substantial interest have a part in "American Standards." Code to protect workmen's heads and eyes is one of many for industrial safety developed through sectional committees.

What Standardization Is Not

by P. K. McElroy

YOU may think that the approach in this discussion is to be a negative one. That is not the intent. Rather, it is proposed to bring out positive sugestions through the contrast gained by the negative approach. Furthermore, the subject as presented is not to be that of theoretical standardization—ideal standardization—standardization in a vacuum—but it is to be standardization as practiced in a world peopled by human beings having normal psychological reactions.

Take one of these human beings who has just been exposed for the first time to the idea of standardization, with its inevitable concomitant — simplification. Through what successive mental attitudes does he progress in his own relationship to this new idea?

His first reaction, naturally enough, is skepticism toward something unfamiliar. As the protagonist of the idea calls to his attention the advantages of interchangeability, low cost, safety, universality, and so forth, already accomplished by standardization in many areas, he becomes aware of the extent to which he personally has benefitted. His life has been made simpler. His standard of living has been improved. When he wants to buy a nut for use in his automobile, or high-test gasoline with which to power it, he can buy either in numberless places of his own choosing and still get what he wants without trouble. In his travels, vehicular and other traffic saves life and limb by keeping to the right side of the road. He has no difficulty buying electric lamps that fit in any socket. Standardization begins to take on a new importance, and he may even begin to feel that those responsible have standardized "too little and too late"!

Now it occurs to him that he is not only a consumer for whom standardization has done a great deal and can do much more, but that he is an engineer or a production man who will encounter standardization in business. As a designer of an inventive turn of mind, he may take a somewhat dim view of standardization, fearing that its simplification features may hamper the free flow of his inventive genius. Standardization then finds him skeptical and a little

Mr McElroy, *in his business life with the General Radio Company, Cambridge, Mass., is a member of the General Standards Committee, Radio Manufacturers Association. This paper was presented at the spring meeting of the Standards Engineers Society.*

on the defensive. However, standards are developed and administered by human beings—the successful ones by people who know human nature. He learns that standards assist rather than imprison him, releasing him from the drudgery of details for the fun of creating something important.

Eventually, he may arrive at a position where a number of other people are involved in carrying out his ideas. It might occur to him then that standardization could be a simple means for enforcing his own desires on others, regardless of their merit. Unless he soon learns better, standardization in his organization will suffer from his misinterpretation of its purposes.

The hero of this fanciful description has discovered a number of truths as well as fallacies about standardization, either ideal or practical. There can be little difficulty in recognizing which idea falls in which category. Most of the abuses of standardization are brought about through ignorance of the proper role of standardization, or through a desire to make it accomplish some selfish purpose for which it is not the proper agency.

Every standard which has been prepared by an earnest, conservative group of men must sell itself in the market place to the representatives of leading manufacturing and educational organizations. Often these representatives are not skilled in the art of standardization. The objections to standards proposals which they voice in their letters indicate misapprehensions. Many of these, witnessed first hand during the routine business of the General Standards Committee of the Radio Manufacturers Association, have suggested some of the "Don'ts" to which attention will be called.

Not the Master—

First and foremost, standards should not be the master but rather the servant.

What It Is Not—based on ideological concepts

In presenting, in detail, what standardization is *not*, a number of ideological concepts basic to practical standardization suggests the first group of interdictions.

Not Monopolistic—

No standards are monopolistic, nor tending to induce monopoly.

Monopoly is repugnant, if not illegal, in most countries of the Western World. Standardization would provide a very easy way of securing monopoly if an item made by only one manufacturer and protected by patent, trade mark, or copyright were to be standardized as the only allowable article. In point of fact, one of the largest difficulties faced by standardization agencies is that of wording, promulgating, and encouraging the acceptance of (not enforc-

---

Despite 31 years of effort by the American Standards Association and its member organizations, large sections of the population—and even of industry itself—have only a sketchy picture of what standardization means.

In this paper, Mr McElroy has tried to make clear what standardization *is*, by defining in detail what it is *not*. Most of his statements carry a challenge —our readers may raise their eyebrows at others. Perhaps you may question Mr McElroy's conclusions, or may take exception to the way he has presented them.

If you feel strongly—or not so strongly—about Mr McElroy's presentation, send in your comments. The ASA, as well as Mr McElroy, will be glad to have them.

ing the observance of) their standards in such ways as not to be in position where anyone can make an accusation of combination in restraint of trade. This, of course, is particularly serious in the case of a trade association, less so in the case of ASA.

Not a Way to Sell—

They do not constitute a way to sell. It is very rare that a patented device is standardized by any important standardizing body. Naturally any article can be standardized within a given privately owned organization. One of the rare examples contradicting this point will help illustrate it.

The Radio Manufacturers Association has standardized a slotted, fluted (you might call it splined) end on the shafts of rotary resistive volume controls. This gadget was standardized because of its almost universal adoption at the time of standardization, because the royalty payments were nominal, and because practically all prospective users were in agreement. These latter requirements need to be satisfied in order to remove the taint of monoply or sales shenanigans.

Not Uneconomic—

Practical standards are not uneconomic. This is like saying that a straight line is the shortest distance between two points. Standards are developed only as they provide or are expected to provide an economic gain. When they fail to do so, they have worse than failed their first test.

Not Too Idealistic—

They are not too idealistic. This particular "not" is aimed at the word "practical". Even though a piece of standardization might be desirable (for example, a requirement that every dwelling unit have a bathtub) it is evident that the practical consideration outweighs the idealistic until such time as the ideal seems reasonably attainable.

Not a Panacea—

Practical standards do not constitute a panacea. We all have our troubles; with people, with ideas, with materials and components, with human frailty, and so on. If we are naive enough to believe that a ukase is a working solution to a difficulty then we may expect that all we need do to solve our problems is to promulgate the proper standard. This is no surer of accomplishing the desired results than it is certain that the passing of a law will eliminate intolerance. Do not expect a standard to overplay its hand.

What It Is Not—based on preparation and use

Some vetoes of standards proposals are associated with modes of preparation and enforcement.

Not One-Way Concessions—

Practical standards are not one-way concessions. This point does not need to be belabored when it is remembered that standards are voluntary and not of much use unless they are generally observed.

Not Necessarily Unanimous—

On the other hand, practical standards are not necessarily unanimous. Unanimity is hardly to be expected. However, when a majority can get together on a reasonable compromise or on the original proposal, the standard is then worth submitting for approval to those who will eventually use it.

Not Imposed From Above—

They are not imposed from above. Those who have had a hand in framing standards will adopt them themselves and urge them on others, even though they may have had to compromise in the framing. On the other hand, they are likely to ignore standardization which is forced down their throats.

Not Compulsory—

Practical standards are not compulsory. While the anti-trust laws would in themselves prevent the formulation of compulsory standards by any except governmental groups, the reasons why practical standards are not compulsory are more basic. The principles on which this country is built make compulsion repugnant. Standards acquire their acceptance through their excellence and from the sales and educational effort put behind them, rather than from the use of a big stick. Legally established standards, such as those of weight, length, temperature, electrical quantities, etc. offer a notable exception, of course.

Not Inviolable—

Practical standards are not inviolable. If they are respected in the great majority of instances, they can be regarded as more than successful. There are many reasons for disregarding them occasionally. One is that a particular standard may lack topical suitability. Another is the possible need for demonstrating to a doubting individualist that the administrator of a standards program is not arbitrary or unyielding. The person who yields may be in a better position the next time bargaining comes up than the one who insisted and got his way. The latter's conscience has been working on him meanwhile. Accordingly, the best way to convince such a willful neophyte is to carry the argument up only to a certain point, for educational purposes. Once this point is reached, a graceful submission pays off large dividends in the future.

Not Always Discretionary—

Not all standards are discretionary. Mother Nature determines the dimensions of the average eleven-year-old boy. The standardizer can only measure, average, and list.

Not Always Formally Developed—

Many standards are not formally developed. They grow by mutual consent or are decreed by society or custom. The differences between men's and women's clothing constitute a case in point.

What It Is Not—based on chronology

Chronology, or the idea of time, is basic to another group of denials.

Not Ahead of Its Time—

Practical standardization is not ahead of its time. It would not have been possible out-of-hand to standardize on a tread width of 56½ in. for the separation of railroad tracks when the first railroad was built. This standardization had to await the trial and error which showed this dimension to be superior to those others, larger and smaller, which had actually been tried. Furthermore, it had to await the recognition of the fact that all railroads in a given

"What is standardization? It is not a goal, it is a means, an instrument, a tool. That is the reason why I do not understand how one can speak of friends or opponents of standardization. I am partial to the hammer when I have a nail to drive in, but I would oppose it if it were to be used for murdering an old woman. The same applies to standardization. It is good when its effect is beneficial; it is bad when it is unfavorable."

—From the work of Ernest Lhoste, former Director-General of the Association Française de Normalisation.

country, or even continent, had to be able to accept one another's rolling stock.

A glaring and necessary exception to this will help point up its almost universal applicability. I refer particularly to television. Once the methods were established by which television, using electronic instead of mechanical scanning, would be possible, it was essential that certain standardization be agreed upon before the industry could proceed. The transmitter and receiver in television are irrevocably keyed together through the number of lines in the picture, the nature of the blanking and synchronizing pulses, and so on. No transmitters for broadcasting nor receivers for general sale to the public could be made until this indispensable standardization was settled, agreeably both to industry and to government regulatory bodies.

Not Historical—

On the other hand, practical standardization is not historical. It cannot wait until everybody is ready to agree before it freezes a dimension or a practice in order to prevent anarchy. Long ago, 60 cycles was chosen as the standard frequency in American alternating-current power systems. Imagine where our network of tie lines would be today without that standardization.

Not Final—

Practical standardization is not final. As with everything else done by humans, mistakes may be made and they must be rectified. Furthermore, as long as the framers realize the standards are not final, they are more ready to make some decision, even though they are not absolutely certain it is the right one.

Not Static—

Practical standardization is not static, rather it is dynamic. As the years pass, the basis upon which a standard was made may change. Time was when 55- or 60-octane fuel was satisfactory for any internal combustion engine—passenger car, bus, or truck. Nowadays, premium grade motor fuel is nearer to 80-octane. When any number of manufacturers have cars on the road with motors with a compression ratio around 12, then premium grade fuel will have to be standardized nearer 100-octane. At all times it is good enough, but not too good. Other instances show how the numerical values in a standard accord and change with the state of the art. The frequency tolerances of broadcast stations have been continually tightened. The same is true of allowable amounts of distortion, noise, hum, and so on. It may be that the presently assigned figures do not represent the suitable ultimate, but even they have been realized only after a great deal of development in the art and were much higher years ago when the art was young.

What It Is Not—based on details

Eventually one gets down to demurring against misconceptions associated with fairly detailed qualities.

Not Necessarily Complete—

Practical standardization is not necessarily complete. If we waited until we could standardize every detail of an item before standardizing any, we could never standardize any, and the result would be restrictive.

Not Restrictive—

Practical standardization is not restrictive. Some details will call for or require standardization—those details at the point where the item concerned encounters its using public and where interchangeability or simplification, or both, are advantageous. The using public for a manufacturer of components—ball bearings, for example—may not be the ultimate consumer at all. His using public might consist mainly of a group of manufacturers making something for the consumer, of which the component is an integral part. Beyond those areas, where standardization is not needed, it should be foregone so as not to restrict inventiveness.

Not Detailed—

Practical standardization is not minutely detailed. Such overstandardization would represent a waste of time on the part of the standardizers and an undue circumscription of the designer.

Not Too Simplified—

On the other hand, it is not too simplified. If, in the course of standardization of a group of components, simplification is carried so far as to eliminate most of the varieties, then the variety that must be retained is that which will meet all requirements or the majority of them. This is likely to be both more expensive and less suitable for many applications. Many of the Joint Army-Navy specifications illustrated this point, and justly so, since the Armed Services have a compelling necessity for simplifying, at almost any cost, the staggering problem of logistics.

Not Universal—

Practical standards are not universal. There are areas into which standardization probably can never be carried. Those are the areas in which one manufacturer's product is made to be distinctively different from that of all others, or areas in which aesthetic qualities supervene.

One might go on, perhaps indefinitely, without touching on all the fallacies about standardization. Many of these ideas are not fallacious when associated with abstract standardization. As soon as one tries to make his standardization practical, however, these erroneous ideas constitute handicaps.

If this article has brought about an awareness of the proper role of standards in practical use, it will have been useful in developing standards as better servants and us as more intelligent masters.

Desiccant Standards Committee Formed by Refrigerating Engineers

A Standards Committee, established by the American Society of Refrigerating Engineers for the purpose of setting up rating and testing standards for desiccants, has been at work since last December.

To date there is no accepted method for rating and testing the many desiccants or refrigerant dryers, which are marketed under many trade names. Many purchasing agents as well as government buying departments have expressed the need for a uniform method of judging the drying efficacy of various desiccants.

The committee is now studying the many published articles and technical data available on desiccants, and the chairman, W. O. Walker, asks further suggestions from engineers in the industry who are familiar with drying problems. Unpublished information is also requested since the committee believes that a great deal of such data exists in industry files.

The committee is made up of the following members: W. O. Walker, Ansul Chemical Company, *chairman;* L. H. Bartlett, Louisiana State University; R. E. Cherne, consulting engineer, Rochester, N. Y.; W. A. Pennington, Carrier Corp.; W. F. Wischmeyer, Sporlan Valve Company; R. L. Williams, Kinetic Chemicals Inc; and P. L. Veltman, Davison Chemical Company.

Inquiries and information may be addressed to ASRE headquarters, 40 W. 40 Street, New York 18, N. Y.

Stretching Rubber Rules to

by Ernest W. Beck

TWENTY-TWO years ago, in 1927, the rubber industry, with representatives of the government, labor, and safety organizations, agreed that workmen need protection against crippling injuries caused by rubber mills and calenders. They not only agreed that there should be safeguards, they also agreed on what those safeguards should be. Since the greatest hazard lies in catching a hand or arm between the ponderous rolls, top on the list was quick stopping of the machines.

Today, with more rubber being processed and with machines traveling faster than ever before, these same groups have again decided that revised safety provisions are needed to meet new conditions resulting from 22 years of change and growth in the rubber industry. Their work of the past three years has been completed with publication of an up-to-date edition of the American Standard safety code providing safety for workmen in the rubber industry in terms of 1949 conditions and equipment.

The standard adopted in 1927 through the work of the International Association of Industrial Accident Boards and Commissions and the Rubber Section of the National Safety Council was recognized as a "Recommended American Practice" by the American Engineering Standards Committee (now the American Standards Association). It was then released "to serve as a guide to State or other supervising authorities," for use by manufacturers of rubber mills and calenders, and for use "directly by the concerns operating machines of this or a similar character."

Strangely enough, the standard was never adopted by state authorities, officially, but on the other hand has become the generally recognized guide for the rubber industry.

Since 1927, as everyone knows, many changes have taken place — particularly in the rubber industry.

The speedup in production required by the war has meant that larger amounts of rubber are now being processed than ever before. Changes in related industries have helped to speed this process. The two principal chemical ingredients of synthetic tire rubber — butadiene made from petroleum, ethyl alcohol, or grain; and styrene made from chemicals derived from coal tar and petroleum—are as a result of war requirements being produced on a large scale for the first time. Compounding methods (by which crude rubber is blended with mineral powders, oils, waxes, tars, asphalts, or fibers to obtain special properties in the finished product) have been quickened because of greatly improved electrical equipment — motors, blending machines, etc. These more efficient motors have made it possible to operate mills as large as 84 in. in diameter that can handle a 600-lb. or more, batch of rubber; and they made it possible to operate not just one huge rubber mill or calender at a time but an entire group of these greatly enlarged mills or calenders at higher speeds.

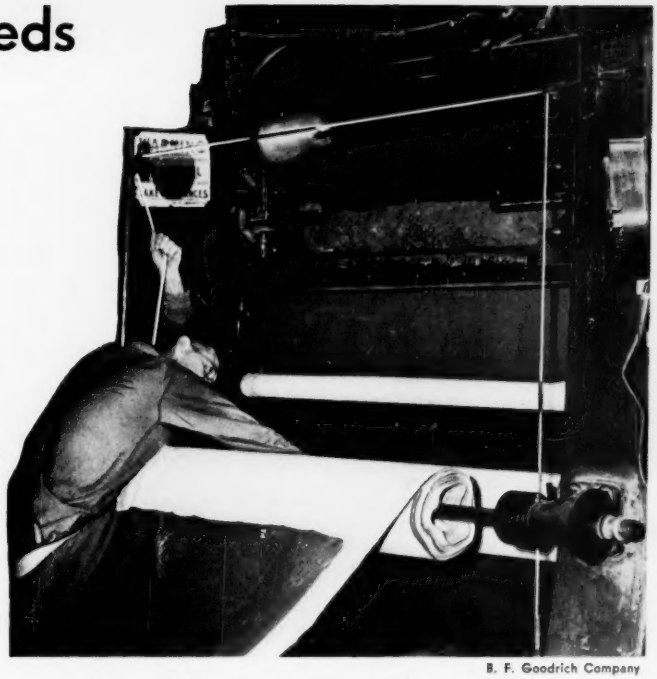
The primary safety problem both in 1927 and in 1949 is to keep the workman out of the "bite" of the rolls. Rubber mills are machines consisting of two heavy cast rolls, lying horizontally one behind the other, and revolving in opposite directions. They are used for the mechanical working of rubber. As a matter of fact, despite the potentially increased danger due to the high momentum of the huge new mills, their great size acts as a safety factor because it is practically impossible for an operator to reach the "bite" of the rolls.

Calenders are equipped with three or more heavy internally heated or cooled rolls set one above the other and revolving in opposite directions. They are used for continuously sheeting or plying up rubber and for frictioning or coating fabric with rubber compounds.

United States Rubber Company

First steps toward rubber production—collecting liquid latex in Malaya.

Meet 1949 Needs



B. F. Goodrich Company

"Dynamic braking," operator-controlled by safety pulleys and bars, protects rubber workers from serious injury.

If a workman's hand or arm becomes caught between the rolls, the speed with which he can bring the machine to a stop will determine how seriously injured he will be. The ideal would be for the machine to stop automatically. However, this has not been found practical. The next choice is "dynamic braking" which is found on modern machines. To provide the greatest efficiency in braking time, the rubber and machinery manufacturers have worked with the electrical equipment manufacturers, and as a result the present dynamic braking method has been worked out. This method causes the motor to serve as a brake —an efficient stopping mechanism. Because it results in a heavy shock to the machine, however, the method can be used only on the most up-to-date and modern equipment, which alone can stand the shock.

Trip bars or cables make it possible for the man himself or for his co-worker to stop the machine.

Recommendations for stopping limits were not made arbitrarily by the committee. As a basis for its decisions, thousands of test stops were made under operating conditions on machines in many plants throughout the country. A subcommittee made up of electrical engineering experts studied the data obtained, balanced this information against technical data on the performance of new equipment, and used the results in developing a revised set of stopping limits. These new limits recognize the advance made since 1927 in developing new and better braking devices which make it possible to stop the rolls in shorter distances than ever before. As a result of all this work, the rubber industry is the only industry in the country today that has a code designating the stopping distance of production machinery in inches — which means in some cases stops within fractions of seconds, especially when the machine is loaded with rubber. The stopping limits of the code have been set up with machines running idle. Since a load of rubber acts as an additional brake to the machine, a mill or calender set to stop within the code limits when it is running empty actually stops in much less distance when loaded with a batch of rubber.

Formerly the stopping limits for mills were established on the basis of the diameters of the front rolls, and computations to determine the stopping distance were based on the size of the roll rather than on speed. There were at that time three roll size groups, designated 0 to 16½, 16½ to 22½, and 22½ to 26 in.

Today, the surface speed of the front roll is the important factor in determining the stopping limits. This provides a much sounder basis for the code.

For example, consider the case of two group mills, each operating at the average mill line speed of 20 rpm, but one having a roll diameter of 12 in. and the other 18 in. Under the 1927 edition of the code, the 12-in. mill would have a stopping limit of 18 in. and the 18-in. mill of 24 in. Under the revised code, the 12-in. mill would have to stop within 15 in., and the 18-in. mill within 22.6 in. One of the important changes in the code, however, is application of stopping limit requirements to the larger, higher-speed machines used today. Because six machines running on one group drive have more momentum than a single machine, the stopping limit for group-driven mills now in use is set by the new code as 2 percent of the surface speed of the front roll, based on travel in feet per minute, whereas single mills now in use are to be stopped within a distance of 1¾ percent of the travel of the rolls as measured on their surface in feet per minute.

The differences between stopping limit requirements for existing installations and for new equipment purchased after the effective date of the new code recognize the better braking performance possible with modern electric equipment. All new group-driven mills purchased after the effective date of the code are to stop within 1¾ percent of the front roll surface speed and all new single mills within 1½ percent.

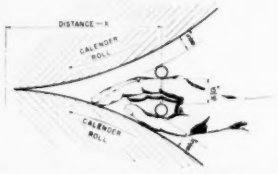
The method of determining the stopping limit requirements for calenders has not been changed except in the case of new equipment. The 1927 code used drive roll surface speed as the determining factor and 2 percent as the limit. The revised code continues the practice for all existing calenders but requires that new calenders purchased after the effective date of the code be capable of stopping within 1¾ percent of the surface speed of the drive rolls in inches. This requirement is also projected up to roll surface speeds of 250 fpm for new calenders, whereas for old equipment the 2 percent pro-

jection is still only carried up to surface speeds of 200 fpm as it was in the old code.

In addition to these changes the revised code contains an elaborate appendix. This appendix, profusely illustrated with photographs and drawings of mill and calender safety devices, has been designed specifically to aid in the application of the code to actual mill and calender installations. Dealing with the problems encountered in the factories where mills and calenders are used, the appendix describes and illustrates methods found to be successful by many of the leading rubber companies in installing safety devices on this equipment.

For example, under today's operating conditions with the widespread use of stock feed conveyors, automatic blending equipment, and take-away conveyors, many difficulties are encountered in providing protection in accordance with the code requirements. However, these difficulties can be overcome, and the appendix shows many different methods of accomplishing this under various operating conditions.

The problem of providing adequate protection at the inrunning feed "bites" of calenders has been a troublesome one for years. In the appendix to the code, however, three different methods of solving this problem are presented. Included in this section is a set of detailed drawings which illustrate the construction of the most effective device yet found —the electrically interlocked, double acting, finger barrier bar.



Interlocked safety bar protects hands at the fabric feed line.

Among the many subjects treated in the appendix are basic engineering principles to be considered in making mill and calender installations safe; for the construction of mill and calender safety switches; emergency release provisions; and inspection procedures (including recommended forms for use in recording stopping distances of the machines inspected and whatever action was taken, if action was necessary).

All in all this revised code is an extremely valuable source of up-to-date information on the factors to be considered and the methods to be used in order to make the operation of rubber mills and calenders safe. No manufacturer or user of rubber mills and calenders should be without it.

Continuity of thinking on the problems of safety in the rubber industry has been maintained since 1927 through the fact that the present chairman of the sectional committee that developed the American Standard Safety Code for Mills and Calenders in the Rubber Industry had served as secretary of the committee that developed the 1927 edition. Ernest W. Beck, Supervisor of Safety, United States Rubber Company, has taken an important interest in this work from its inception. He has had personal experience with the problems faced by this committee. For 30 years he has supervised the safety work of one of the four largest rubber producing companies in the country. In addition, he has had charge of the health, sanitation, and fire prevention efforts in all of the company's factories, branches, and warehouses throughout the country. Not content with serving his company alone, Mr Beck is active in the National Safety Council, and the American Society of Safety Engineers. During the war he was one of three members of the Safety Advisory Committee, War Department, and was a member of the Safety Advisory Committee, Ordnance Department, Chicago.

Organized under the procedure of the American Standards Association, Sectional Committee B28 is sponsored by the National Safety Council. F. A. Van Atta, National Safety Council, serves as the committee's secretary. Organizations represented on the committee are:

American Society of Safety Engineers
Association of Casualty and Surety Companies
Farrell Birmingham Company
International Association of Governmental Labor Officials
National Association of Mutual Casualty Companies
National Electrical Manufacturers Association
National Bureau of Standards
National Safety Council
Rubber Manufacturers Association
U. S. Department of Labor
William R. Thropp & Sons Company

Copies of the American Standard Safety Code for Mills and Calenders in the Rubber Industry, B28.1-1949, can be obtained from the American Standards Association, 70 East 45 Street, New York 17, N. Y., $1.00 each.

Many Materials Now In Standard Size and Dimensions

Application of the principles of modular coordination need not wait until all building products are available in modular sizes, it is pointed out in an article, titled "Coordination and Standard Products in Small House Design," published in Technical Bulletin No. 9 of the Housing and Home Finance Agency. The article says that modular coordination can be applied in design and construction right now through the use of commercially available materials.

The principles of modular coordination, combined with simplification of parts and methods of assembly, have been used in the plans of a two-bedroom house used to illustrate the article. The plans meet the requirements of the small family of moderate income, and incorporate insofar as possible those features indicated as desirable in recent surveys. The same principles can be adapted to the design of larger houses. Those features include (1) space for dining with a visual sense of separation from the living room; (2) space in the kitchen for quick meals; (3) entrance hall or vestibule; (4) facilities for laundering and ample storage space.

The modular coordination approach to cost savings does not necessarily result in standardized houses, the article contends, and does not restrict freedom in design. Many materials in standard sizes are readily available for the assembly of dwellings, and through careful attention in their use at the design stage can produce houses of good quality and livability with substantial savings in cost.

For a discussion of how modular coordination helps in cutting costs and simplifying design work see STANDARDIZATION, April, 1949, p. 93.

ASA Annual Meeting October 11-14

To Discuss Standards Problems

AMONG the important features that will mark the first four-day annual meeting of the American Standards Association, October 11 through 14, will be an all-day session to discuss a proposed uniform hygiene code for use by all industries, a full day devoted to the significance of company standards work, a series of papers on international cooperation, and a joint working session of the Standards Council and the Board of Directors. The meeting is being held at the Waldorf-Astoria Hotel, New York. Representatives of all company members as well as association members are invited to attend and participate.

The first day, October 11, will feature meetings of the technical groups working under the Association's procedure. The Mechanical Standards Committee will hear reports and discussions of work on mechanical standards under its jurisdiction. The Safety Code Correlating Committee has invited committees and groups working on industrial health standards to take part in a general discussion and state their ideas as to whether the American Standards Association should initiate a project on a Uniform Industrial Hygiene Code that would cover the health needs of all types of industries. Also meeting on this day will be the Sectional Committee on Letter Symbols and Abbreviations for Science and Engineering, through which shortened forms of technical words are developed for use in engineering and scientific literature in many fields.

On Wednesday, October 12, the Company Member Conference will have a full day of papers and discussions on standardization problems of particular interest in company operations. T. D. Jolly, president of the American Standards Association, will set the keynote of the meeting by speaking on the "Importance of the American Standards Association in the National Economy." Other papers to be presented are:

What Procurement Expects of Standardization. By Vincent de P. Goubeau, Director of Materials, RCA Victor Division, Radio Corporation of America. A discussion of the utilization of standardization in company procurement.

American Industry's Stake in Plant Construction Standardization. By W. H. Kiler, Standards Section, E. I. duPont de Nemours & Company, Inc. Industry's interest in local building codes and standards for construction and building materials, with specific examples.

How to Use the Standard for Thin Sheet Metals. By I. V. Williams, Materials Engineer, Bell Telephone Laboratories. Experience of some of the industries—particularly aircraft and electrical.

Where Should the Standardization Activity Fit into an Industrial Organization? By Thomas J. Finan, Manager of Education and Training, RCA Victor Division, Radio Corporation of America. Should standardization come under engineering, purchasing, or production?

The Conference of Executives of Organization Members of the ASA on Thursday morning, October 13, is open to members only.

What international standardization means to the United States is the subject of a talk by Joseph A. Greenwald, International Resources Division, State Department, at the Thursday afternoon meeting. Howard Coonley, president of the International Organization for Standardization, will preside. Other papers, reporting on international committee meetings, will include:

ISO Plenary Assembly and Council. By Vice Admiral G. F. Hussey, Jr, USN (Ret), secretary, ASA.

The Work of the International Electrotechnical Commission. By Dr H. S. Osborne, chief engineer, American Telephone and Telegraph Company; President, United States National Committee of the International Electrotechnical Commission.

American and Foreign Standards for Ball and Roller Bearings. By F. Leister, Vice President, The Fafnir Bearing Company, and R. M. Riblet, Chief Engineer, Automotive Division, The Timken Roller Bearing Company.

Limits and Fits—A Fundamental Problem in the Machine Industry. By W. H. Gourlie, Standards Engineer, The Sheffield Corporation.

Preferred Numbers—An International Tool for Standardizers. By Dr John Gaillard, Mechanical Engineer, American Standards Association, and Secretary, ASA Sectional Committee Z17 on Preferred Numbers.

International Problems of Compressed Gas Cylinders. By F. R. Fetherston, Secretary, Compressed Gas Association.

What Can Be Done Toward World Unification of Screw Threads. By George S. Case, Sr, Chairman of the Board, The Lamson and Sessions Company.

The Board of Directors will meet Thursday evening, October 13. The business meeting of the Standards Council Friday morning October 14 will be followed by the Annual Meeting luncheon. It had been originally announced that Dr Karl T. Compton would be the guest speaker but he has had to withdraw on doctors' orders.

Special arrangements have been made to permit the Board of Directors and Standards Council to meet together to exchange ideas. This session, Friday afternoon, October 14, will hear reports of the president, the chairman of the Standards Council, and the secretary.

Wilson Compton, ASA Meeting Speaker

The Honorable Wilson M. Compton, alternate member of the U.S. delegation to the fourth United Nations Assembly and president of the State College of Washington, will be the speaker at the Annual Meeting Luncheon Friday, October 14. Dr Compton is known nationally and internationally as an economist, educator, and leader in the lumber and forest products industry.

In taking a leading role in this industry, Dr Compton has served as secretary and general manager of the National Lumber Manufacturers Association, as vice-president and manager of the American Forest Products Industries, Inc, and also as founder and president of the Timber Engineering Company. Interested in the industry's technical development, he was founder of the national industry-owned Wood Research and Testing Laboratories.

His contributions in the trade association field brought him the American Trade Association Executives medal in 1937.

In addition to his services to the industry, Dr Compton has served the Federal Government in many ways—at present as a member of Advisory Committees of the Forest Products Division, U.S. Department of Commerce; U.S. Timber Conservation Board; and Materials and Equipment for the Quartermaster General, U.S. Army. He is also consultant for the Research Committee of the Office of Scientific Research and Development.

Steel Designations

Subject: Pros and cons from experts in their fields on the desirability of using a standard system of steel designations.

To: Readers who are interested in the comments evoked by Mr Abegg's article on proposed Swiss steel designations (Standardization, July 1949)

These comments are the writers' individual opinions, not those of their companies or associations.

From H. B. Knowlton, Supervisor of Materials Engineering, International Harvester Company (Society of Automotive Engineers)

We are inclined to agree with Mr Abegg that there would be some advantage in international standardization of materials. As our company has operations all over the world, the writer is naturally conscious of this fact.

Any scheme for standardization of metallic materials must be worked out by a group of competent metallurgists. The greater the number of industries involved, and the greater the geographical territory covered, the more difficult this problem becomes. We have even found considerable difficulty in arriving at agreements within our own organization.

The proposed Swiss system is a step in the right direction, but it is many millions of steps behind the progress which has already been made in the United States and Canada. Before proposing the Swiss system as an advantage over the ones in use in this country, it would be well to make a thorough study of the specifications already published by such organizations as the Society of Automotive Engineers (including the Aeronautical Materials Specifications) and the American Society for Testing Materials and all of the Steel Products Manuals issued by the American Iron and Steel Institute. These specifications and manuals together cover several thousand pages of printed matter. In spite of this it seems to be necessary for individual users to prepare their own specifications for particular applications.

There seem to be several ways in which the proposed Swiss system is very inadequate. For example, the "end use" given is too general to be of any value. In many cases steel-using companies have found it desirable to inform steel mills on the specific parts to be manufactured, as this may give some information with regard to special characteristics, such as surface finish, center properties, etc., which are desirable. On the other hand, in the proposed system separate designations are given for general civil engineering and general mechanical engineering. It seems to the writer that this is meaningless as the same identical steels are used in civil and mechanical engineering structures.

If we interpret Table 2 (July issue, page 173) correctly, it would be necessary to include the complete analysis in the specification. The use of SAE code numbers, which were developed about 40 years ago, is far superior to any method in which complete analysis must be shown.

Briefly, our own technical societies have made the following contributions toward the standardization of specifications:

The American Society for Testing Materials has prepared quite a number of specifications on a specific end use basis. These have been found valuable in the railroad and building industries, and are used quite generally by many other industries. In many cases it is required that the steels which are not to be heat treated meet specifications for physical or mechanical properties in the as received condition.

The first contribution of the Society of Automotive Engineers was the preparation of standard specifications for composition of carbon and alloy steels used in the automotive industry. The majority of these steels are subject to heat treatment by the user; consequently, the chemical composition is of more importance than physical properties in the as rolled condition. The SAE has also led in the development of information concerning heat treatment, properties, and uses of automotive steels. The aircraft materials specifications cover specific requirements for individual applications in the aircraft industry.

The American Iron and Steel Institute has written up the most thorough description of steels, including not only analysis but definitions of processing, quality, and finish. In most cases a composition code number similar to that developed by the SAE, and prefix and suffix letters designating processing and quality, are employed. These letters are abbreviations of words, and are meaningful and easily remembered. For example C1045, SBQ, HR, mean an Open Hearth Carbon Steel with analysis as given for 1045, Special Bar Quality, Hot Rolled.

The American system is far from perfect, and we hope to see it improved. It is, however, far superior to any of the European systems with which we have had a meager amount of second-hand contact. The next logical step should be to unify the good points of the several systems in existence in this country.

From L. A. Danse, Supervisor Materials and Processes, P.E.S., General Motors Corporation (Society of Automotive Engineers)

While General Motors experience has been limited to the transportation, household appliance, and allied industries, even this group of manufacturing fields includes use requirements which are not covered in Mr Abegg's tabulation. With such a breath-taking proposal, having such a limited base, we suggest that the time is entirely too short to develop competent opinions on the subject.

For the past couple of years we have discussed with the Office Chief of Ordnance, Washington, some proposals that Ordnance steels be specified upon engineering requirement of performance bases. This has gone through several mutations and is still under consideration by the GM Metallurgical Committee without having done anything but maintain interest in the possibility of broader steel specification standards.

The use of SAE material codifications for auxiliary purchasing specifications, such as AMS and General Motors, and many others which are applied to the basic materials, facilitates industrial manufacturing processing. We fear, however, that jumping from a system developed over long years to numbers which are proposed after only brief and limited-tonnage study would put us from the fire pit into the fire.

From George Harnden, Standards Division General Electric Company (Chairman of the Committee on Unification and Designation of Properties of Metals, Iron and Steel of the Company Member Conference of ASA)

Considerable thought and study have no doubt gone into the proposal by the Subcommittee of Technical Committee 13 on Steel of the Society of Swiss Machinery Manufacturers; however, the proposed designations appear to be long and unwieldy. Furthermore, this Swiss Committee has tackled the problem from a different point of view than the one we have been following here in the States in our ASA Company Member Conference Subcommittee. We believe, at least in the present state of our review, that any system should be as short as possible, should have the minimum number of symbols that would fill the need, and that these symbols should be set up on a strictly arbitrary basis.

The results of our review (incidentally, a report has not yet been made to the ASA Company Member Conference) indicate that a unified system of designations for iron and steel is most urgently needed; if practical, it should be extended not only to the nonferrous metals, but also to the nonmetallic materials. This being the case the problem becomes aggravated due to the fact that the same type symbols used for the metallic materials probably could not cover all of the various types of nonmetallic materials.

It is also questionable as to how far we could carry out a designating system in covering all of the requirements placed on a specific specification. For instance, the proposed Swiss specification takes into consideration in the symbol all of the various characteristics which a design engineer might place on the material. However, I believe that they have complicated this somewhat by indicating both the analysis number and the alloy group. It seems to me that the analysis number alone should be sufficient to tie down the particular alloy.

Tensile strength has been taken as the criterion for engineering requirements in this proposed set-up and I wonder how a material might be designated when the tensile strength is waived and the engineering requirement is placed on the basis of grain size, possibly, or hardness, or impact, or any one of the other many characteristics which might be specified by the engineer. This proposal apparently does not apply to castings, as there is no provision under Section 3 for the cast form. If provision were made for the cast form, then some provision would have to be made also for the various casting processes, and by this I mean the molds used, such as sand cast, centrifugally cast, permanent mold cast, etc.

The proposed system as set up does not appear to lend itself to the over-all coverage of metals in wrought or cast form. I do believe that it indicates a step in the right direction, but before it is proposed on an international basis, it certainly warrants further study in conjunction with other designating schemes which are now being developed within this country by a number of different standardizing groups.

From G. C. Riegel, Chief Metallurgist, Caterpillar Tractor Company (Society of Automotive Engineers)

International standardization which facilitates understanding and commercial relations is a very desirable goal.

However, Mr Abegg apparently has not distinguished between *composition* and *specification* as defined by the SAE. In this respect, the definitions on pages 286, 287, and 288 of the SAE Handbook make this quite clear. According to the latest metal statistics, the United States produced more iron and steel in 1948 than all the rest of the world combined. The coding system which has served the dominant group so successfully for so many years certainly ought to have weight in proportion to its serviceability.

Next, the writer sees no advantage from Mr Abegg's method of coding that would make it any easier to remember than the symbols of the Chinese classics. It would be a sheer task of memory to interpret the symbols relating to various ferrous and nonferrous specifications according to his suggestion.

The majority of material is first handled on the basis of composition whether it is iron or nonferrous, and from the standpoint of specifications only, the consumer will know all of the characteristics desired in the end use which he himself should specify in agreement with the producer.

As an over-all suggestion for codification of material composition by symbols, the writer would like to call attention to the atomic numbers, their simplicity and possibilities of being used in the Dewey decimal cataloging system which ultimately might become a basis of international standardization.

Until all of the standardizing bodies in American and English-speaking countries which control the greatest volume of production and distribution of metals and their alloys have had an opportunity to bring their joint deliberations on this subject to some common basis, it would seem premature for those on the outer fringe to start publication of systems and codes which represent a less common basis, maybe less understandable, and would be less likely to be universally accepted. In so doing, they are likely to "muddy up the waters" of common understanding.

(Continued on the next page)

Viewpoint of the steel producers as presented in a paper by Charles M. Parker and quoted in part from an article in SAE Journal, April 1949

Mr Parker is Secretary, Committee on Manufacturing Problems, American Iron and Steel Institute

Each of the six most common methods of specifying steels has distinct advantages to either the producer or user. No one of them is completely fair to both.

These six methods are:

1. By requesting the steel producer to furnish steel to make an identified part on equipment and by fabricating methods available to the consumer.
2. By product commodity description, such as wool wire, roofing sheets, baby carriage spring steel, and boiler firebox plate.
3. By chemical composition and quality designation, as by SAE, WD, AMS, or AISI number.
4. By mechanical properties, such as tensile strength.
5. By hardenability limits, as typified by the standard "H" alloy steels.
6. By formal specifications—such as ASTM, Federal Specifications Board, or Navy specifications—which may contain two or more of the first five methods.

If the steel consumer has a well-rounded knowledge of steel manufacture and processing, and if the steelmaker has an intimate knowledge of the consumer's plant and processes, then the first method is most equitable to both parties.

Second method, describing steel by end use or commodity name, is the oldest form of specification.

In accepting an order to such a specification, the steel producer does not reveal the exact process he will use to get desired results.

Recent studies show that persons writing specifications for deep-drawing quality sheet steel admitted inability to state deep-drawing quality without qualification. Reason for this is the many variables likely to be experienced in the use of the sheets by the customer, and in the individual steelmaker's practices devised to produce steel to perform satisfactorily.

Technology of sheet-steel testing and test-results evaluation has not yet been developed to predict accurately the drawability of a lift of sheets. Thus the only safe means of defining quality seems to be in terms of expected performance of an identified item. Because so many variables enter into manufacture and utilization of sheets in stampings of specific design, the obvious definition should be in terms of performance—not in specific processing for individual parts.

Only 22 percent of the steel manufactured is ordered to chemistry, the third method, although there is probably more literature on this method than any other.

Of course, the old concept that all steels are the same, except for chemical constituents, is false and misleading. Fundamentally, carbon steels may be produced within specified chemical limits of a given grade and still have widely dissimilar characteristics.

In all phases of steel production various practices are used which determine type, characteristics, and quality of the finished material. Each variation has a proper and useful place, depending on the end products to be made and fabricating methods. Obviously it would be wasteful to make all steels of a special quality, regardless of end use; for many applications nothing would be gained in the product's performance. Yet there are many cases which do require higher standards of quality, and restrictions imposed may involve laborious and time-consuming operations.

For many steel uses the only really significant properties are strength and ductility. For these the fourth method is used . . . specifications stipulating values such as tensile strength, yield point, reduction of area, elongation, bend tests, drift tests and crushing tests.

Such specifications generally give the steel producer appropriate leeway as to what he can furnish regarding chemical composition, while still meeting the customer's requirements.

Specifying both chemical composition ranges and limits and mechanical properties is inadvisable for many reasons. Greatest difficulty in devising such a specification lies in keeping provisions of the specification homogeneous for the product involved. All too often desired chemical composition is technically incompatible with desired mechanical properties.

Chemical hardness specified is sometimes inconsistent with mechanical ductility. And occasionally strength-yield point ratios specified are impossible to attain with specified chemistry, shape, and section size. And even if both chemical and mechanical provisions were met, the steel might not perform satisfactorily in fabrication.

If only chemical limits and mechanical properties are specified, any inconsistencies usually are caught by the steelmaker before the order is placed for production. But there is a growing tendency for steel consumers to keep in the background a fabricating or end-use requirement. More often than not these requirements are far more important than chemical composition or mechanical properties.

Ordinary chemical composition tells us little about steel because it does not tell us how the elements are arranged structurally. Because steel's microstructure and attendant hardness values correlate well, the standard end-quench test was developed. It was used originally as a means of predicting hardening properties. The test has resulted in establishment of the H-band specifications, the fifth way of ordering steel.

Important as these specifications are in peacetime to alloy steel consumers, they will become doubly essential in case of war; they make possible intelligent and effective conservation of alloying elements, the bulk of which is secured from distant foreign sources.

The formal specification, sixth way of ordering steel, is a widely-used and generally-accepted method for a large group of specific end uses. A formal specification resolves itself into a statement to the steelmaker from the consumer concerning his desires. Such a formal specification does not always represent the consumer's actual needs; his needs may be more or less than set forth in the specification.

The formal specification generally covers such details as method of manufacture, chemical composition, mechanical property values, tolerances, and methods of testing. All provisions of the specification are supposed to be consistent and ordering steel to meet a recognized specification would seem to ensure securing steel to do a given job.

But that is true only if the scope clause of the specification adequately sets forth the proposed end use of the steel that the specification is supposed to cover. A strong scope clause can save an otherwise poor specification because it puts the responsibility for performance of the steel on the steelmaker, if he accepts the specification in its entirety.

Bakery Engineers Society Active

Plans New Safety Measures

THE American Society of Bakery Engineers, of which Harold T. Moody, Ralphs Grocery Company, is president, is one of ASA's newest Member-Bodies.

This Society's prime object is to keep the production men of the baking industry informed of all technical and mechanical advances in the field. One of the chief ways of accomplishing this is through the reports given by leaders in the various departments of bakery research at the Annual Meeting of the ASBE. These reports, supplemented by bulletins issued from time to time, are circulated in book form to members.

Harold T. Moody

Victor E. Marx

In order to keep up-to-date on current matters, special committees study and report on general problems of the industry—shop organization, personnel, mechanical layout, operating difficulties, and so on. The Standardization Committee, for example, works closely with the equipment manufacturers and has set up experience depreciation rates for equipment that has been accepted by the industry. Through this committee, moreover, the ASBE has issued recommended standards of sizes and capacities of bakery equipment, which are generally in use in the industry. The Safety Committee cooperates closely with the National Safety Council.

This year the ASBE celebrates the 25th anniversary since its founding by a group of progressive bakery production superintendents who saw the need for a clearing house for the collection and distribution of knowledge and information pertaining to the bakery business. Today the Society consists of approximately 2400 members comprising bakery owners, bakery managers, bakery production men, bakery engineers, bakery chemists, as well as bakery technicians employed by bakery ingredient manufacturers, bakery equipment manufacturers, bakery supply houses, and bakery service organizations.

Active in the ASA for many years the ASBE has recently requested that the ASA initiate a project for the development of a sanitary code for the baking industry. The Society is already sponsor for the ASA Sectional Committee on Bakery Equipment, Z50. As a result of the work of this committee, the American Standard Safety Code for Bakery Equipment, Z50.1-1947, was developed.

Safety for Young Workers Under Labor Standards Act

The task of investigating the working conditions and fostering better employment opportunities for some two million youngsters who work the year round and for one to one and a half million others who join them in the summertime has, by Congressional action, been transferred to the U.S. Department of Labor's Bureau of Labor Standards. This task was formerly handled by the Wage and Hour Division which will continue to enforce the child labor provisions of the Fair Labor Standards Act.

In addition to research into child labor conditions and promotion of employment opportunities for youth, the Bureau of Labor Standards' expanded program also includes the negotiation and servicing of Federal-State agreements whereby State employment and age certificates are accepted as proof of age meeting the requirements of the Fair Labor Standards Act. Some 44 states have made such agreements.

Under the Bureau's new program hazardous occupations for young workers will also be investigated and orders drafted, under the authority of the Fair Labor Standards Act, to prohibit the employment of youngsters under 18 in such work. Seven orders have previously been issued covering their employment in and about plants manufacturing explosives; as motor vehicle drivers and helpers; in coal mining, logging, and sawmills; as operators of woodworking machines; as workers liable to exposure of radioactive substances; and as workers on hoisting apparatus. Information on industrial accidents among young workers will also be analyzed and disseminated.

Continuing as part of the work of the Bureau of Labor Standards will be the analysis of State child labor laws. Assistance will be given to State officials and community organizations.

Call for Information on Modular Coordination

Dimensional coordination, as carried on under the A62 Project of the American Standards Association and sponsored by the American Institute of Architects and the Producers' Council, requires information as to how many firms have converted wholly or in part to modular sizes for their products. For the benefit of the project, we are now asking if all firms who have converted will file their names as soon as possible with the secretary of the project: W. H. Deacy, Sr, Secretary, ASA Committee A62, American Standards Association, 70 East 45 Street, New York 17, New York."

A Universal Language

Letter Symbols for Electrical Quantities

New edition of American Standard, replacing symbols adopted in 1928, represents one link in world wide agreement on a universal symbolic language for physical science.

by Edward Bennett *who is Professor Emeritus, University of Wisconsin, Consulting Engineer and chairman of Subcommittee 8 on Letter Symbols for Electrical Quantities, appointed by ASA Sectional Committee on Letter Symbols and Abbreviations for Use in Science and Engineering, Z10.*

The new edition of the American Standard Letter Symbols for Electrical Quantities, Z10.5-1949, is a revision of an earlier American Standard Z10g1-1929. The revision was prepared by ASA Z10 Subcommittee No. 8 on Letter Symbols for Electrical Quantities, one of 12 appointed by Sectional Committee Z10, Letter Symbols and Abbreviations for Use in Science and Engineering. This sectional committee is sponsored by the American Association for the Advancement of Science, American Society of Civil Engineers, American Institute of Electrical Engineers, the American Society for Engineering Education, and the American Society of Mechanical Engineers. This committee, organized originally in 1926, was reorganized in 1935.

Subcommittee No. 8 was appointed in 1937 under the chairmanship of J. F. Meyer. In March 1940 it issued a preparatory report on a proposed revision of the existing American Standard Z10g1-1929. In October 1940 the membership of the committee was greatly enlarged under the chairmanship of Edward Bennett. This committee issued a revision of the 1940 report in August 1942, and since then has had numerous group conferences and four letter ballots on further partial revisions of the proposed American standard.

Both chairmen of Subcommittee Z10.8 have been members of the IEC Wennerberg committee which prepared the International Electrotechnical Letter Symbols of the International Electrotechnical Commission.

Copies of the American Standard Z10.5-1949 can be obtained at 60 cents from the American Standards Association or from the American Institute of Electrical Engineers, sponsor organization that published it.

A BROAD program envisioned for the development of a universal language for electrical quantities has been realized with the adoption of new letter symbols. The new symbols will be used in all types of technical and scientific literature.

On the recommendation of a committee representing 36 important scientific, technical, educational, and governmental groups in the United States, the American Standards Association has approved an up-to-date list of American Standard Letter Symbols for Electrical Quantities. These symbols, replacing the edition published in 1929, provide technical and scientific writers with a list of symbols which not only have been agreed upon by representatives of those groups with a special interest in their use but that also are in excellent agreement with the symbols published by the International Electrotechnical Commission for international use.

Having been prepared by one of the 12 subcommittees[1] appointed by the ASA Sectional Committee on Letter Symbols and Abbreviations for Use in Science and Engineering, Z10, they are also in good agreement with the symbols for physics, for mathematics, and for the radio sciences prepared by other subcommittees under this same committee. Conferences and extensive correspondence between the chairmen of the four subcommittees have prevented conflicts.

ASA Sectional Committee Z10 was organized under the procedure of the American Standards Association in 1926, and works under the sponsorship of the American Association for the Advancement of Science, the American Society of Civil Engineers, the American Institute of Electrical Engineers, the American Society for Engineering Education, and the American Society of Mechanical Engineers.

Distinctive Features of the Standard for Electrical Quantities

The letter symbols for the magnitudes of the electrical quantities are printed in two tables under two different arrangements. In the more important arrangement, Table 2, the letter symbols appear in the alphabetical order of the names of the quantities they symbolize. In the second arrangement, Table 3, the letter symbols appear in the alphabetical order of the letters themselves.

The first feature of Table 2 grows out of the fact that a number of electrical quantities have had applied to them, by different writers, from two to six differing names. The worst

[1] *These 12 subcommittees cover mathematics, physics, hydraulics, mechanics of solid bodies, structural analysis, heat and thermodynamics, photometry, aeronautics, electrical quantities, radio, chemical engineering unit operations, and abbreviations.*

example is *electric intensity*, which is also called *field intensity, electric field strength, electric force, electric field,* and *potential gradient.* The experience of Subcommittee 8 indicated clearly that the agreement upon standard letter symbols for the electrical quantities is far better, and easier to bring about, than the agreement as to preferred names. This is to be expected because the preferences as to the preferred names are necessarily based upon the differing sequences in which different individuals conceive of the electrical quantities as being developed and as being defined in terms of earlier defined quantities. On the other hand, agreement is more readily reached upon a letter to symbolize the *magnitude* of a given physical quantity regardless of the sequence followed in defining the quantity. The experience of the committee in this situation has led to the first distinctive feature of Table 2, namely:

Feature 1. Each quantity appears at only one place in Table 2 (with three exceptions), listed alphabetically under its preferred name. The non-preferred names appear in parentheses under the preferred name. Deprecated names are also in parentheses but in addition are asterisked thus to designate deprecation: (electric force)*

This feature makes Table 2 rather brief (four printed pages of widely spaced items). This is in contrast to other tables that have appeared in which the same quantity is listed at as many as eight different places in the table. A person who uses the deprecated name *electric force* and who turns to *force* in Table 2 to find the symbol for his *electric force* will not find the symbol at that point of the table. If he has not heard the preferred name, he may have to spend a minute scanning the four-page table until he locates *electric force* under the preferred name, *intensity, electric.* It is believed that this experience will do much to make the individual conscious of the work of the ASA Committee on Definitions of Electrical Terms.

The policy of creating a greater awareness of the standardizing work of the ASA Committee on Definitions of Electrical Terms and of increasing the usefulness of Table 2 has led to the second distinctive feature of Table 2.

Feature 2. In Table 2, a column headed "ASA Definitions" follows the column containing the names of the quantities. The three-part numbers appearing after the name of each quantity, in the "ASA Definitions" column are the numbers of the definitions of the quantities as they appear in American Standard Definitions of Electrical Terms, C42-1941.

Feature 3. As a further guide to the definition of the quantity symbolized, the name of the unit of each quantity in the meter, kilogram, second system (mks system) of units has been printed in a column headed "Illustrative units (mks system)."

This feature is intended to have the additional effect of familiarizing users of the table with the mks absolute system of units. This system is now completely defined by the two standardizing actions of the International Electrotechnical Commission, namely, first, the action of 1935 in adopting the meter, the kilogram, and the second as the fundamental units of an "Absolute Practical System" of electrical units to supplant the system of "International Units"; and, second, the IEC decision of 1938 to link the electrical units to the mechanical units of the mks system by the assignment to the magnetic permeability of evacuated space of the numerical value $4\pi\ 10^{-7}$ for the rationalized system, or 10^{-7} for the unrationalized system.

Feature 4. This is a standard relative to the sequence of the double subscripts to the symbols for the multiplying operators in the treatments of networks.

In electric networks, the constituent loops may be coupled through effects that are asymmetrical (not mutual) as through three-electrode thermionic valves, motionally generated emfs, or saturable core reactors with rectifiers. In these situations, it is imperative that all writers adhere to the same *mathematically significant principle* governing the sequence of the double subscripts to the symbols for the coupling factors. The subcommittee has stated this principle and has adopted as a standard a rule for effectuating it. The governing consideration is to have the fundamental equations of the network yield determinants in which the subscript sequence conforms to the mathematician's conventions.

The standard also contains a standard double-subscript notation for the treatment of unbalanced polyphase systems by the method of *symmetrical components.*

Feature 5. This is a typographical standard for distinguishing on the printed page between the symbols for scalar, phasor, and vector quantities.

The subcommittee has undertaken to standardize a typographical notation for distinguishing in the equations and text of the printed page between the letter symbols for the following three kinds of *mathematical quantities* used in expressing the quantities of *physical science:*

scalar quantities

complex quantities (phasor quantities)

vector quantities

Complex quantities are extensively used under conventions by which the solutions for the steady-state values of sinusoidal variables in networks and long lines are obtained by algebraic methods. Among electrical engineers the practice has become rather general of calling these complex quantities *vector quantities.* The subcommittee deplores the confused and erroneous thinking that follows this practice. The subcommittee uses the term *phasor quantity* to designate these complex quantities, in the expectation that *phasor* will displace *vector.* It sets up distinctive typographical standards for distinguishing between scalars, phasors, and vectors. In the preferred typographical standard, symbols for scalar quantities are printed in italic type face, symbols for phasor quantities in bold-face italic, and symbols for vector quantities in bold-face Roman type.

The extent of the world-wide agreement upon the letter symbols for designating the magnitudes of the quantities of physical science is most heartening. It hardly seems a gross exaggeration to say that for this field, the goal of a universal symbolic language has been attained.

Committee To Study Ink Testing Methods

Plans have been made by the newly formed Technical Committee on Printing Ink of the American Society for Testing Materials for the appointment of working sections on nomenclature and definitions and for consideration of testing methods for the various properties of inks. The first official meeting of this committee under the chairmanship of A. C. Zettlemoyer of the National Printing Ink Research Institute was held June 28 at Atlantic City.

Brazilian Government Trade Bureau

Not wavy sidewalks, but Rio's famous mosaic tiles.

Important

Certification and Labeling Planned

AT the request of the Brazilian electrotechnical industry and other industrialists of São Paulo, Brazil, preliminary plans have been discussed by the Brazilian Technical Standards Association for extending its activities to include certification and labeling of those products that conform to ABNT standards. A meeting to discuss the plan was held in Rio de Janeiro on November 3, 1948 under the chairmanship of Dr Paulo Sá, General Secretary of ABNT.

The conference was initiated by Dr Sá at the request of São Paulo industrialists and of Eletromar, Brazilian Electrotechnical Industry, represented by Sr Bergman, an enthusiastic supporter of standardization, after Dr Sá had submitted a report to the directors of ABNT proposing that, if and when required to do so, industrialists manufacture their products to conform to ABNT standards.

Although no definite plans were made at the meeting, a tentative outline for the formation of a division of certification and labeling was considered. This plan, the most important result of the meeting, caused a lively exchange of opinions, revealing the interest this subject aroused.

As proposed by Dr E. Berlinck, chief of the São Paulo branch of the Brazilian Technical Standards Association, the division of certification and labeling would serve as the ultimate authority to verify the fact that products manufactured by brand name meet the requirements of ABNT standards, and to certify this fact. A seal of conformity would be issued by the ABNT, it was suggested.

Dr Berlinck's tentative outline also suggested that the ABNT set up the division as the ultimate authority for verifying and certifying products manufactured by brand-name and conforming to the standards of the ABNT. Responsibility for the "Seal of Conformity" would be invested in the ABNT. It was also suggested that manufacturers, under penalty of a fine, enter into agreement with the ABNT and that they use the "Seal of Conformity" strictly in accordance with this agreement.

The Division of Certification and Labeling, it was proposed, would be managed by an engineer, who would have a staff and inspectors working under his direction. This staff would collect samples of goods to be delivered to him and to the various ABNT laboratories for testing. The designated laboratories would make analyses and tests according to ABNT standards and would certify whether the sample submitted does or does not conform to the ABNT standard.

It is proposed that in the case of goods bearing the "Seal of Conformity" the ABNT have the authority to obtain samples in the open market and require that these be tested at the expense of the contracting industry or manufacturer. If the ABNT finds an unlawful use of the seal, it would communicate with the manufacturers to correct this condition. After three infractions, the privilege of using the seal would be suspended for this manufacturer. The seal could be reissued, however, after three consecutive lots of merchandise had been tested and found to correspond to standard specifications.

It was also proposed that, from time to time, the ABNT publish a list of the products bearing the "Seal of Conformity," the names and addresses of the manufacturers and a description of the seal.

The proposal states that funds in the form of fees supplied by the industries which voluntarily recognize the necessity for using the "Seal of Conformity" pay for the operation of this division. These fees are to be collected in accordance with the number of lots to be certified, the number and cost of the tests to be made, and the cost of freight. The price of the product is to include these expenses.

After his product has been certified, the manufacturer would pay a fee in order to receive the number of seals corresponding to number of manufactured pieces. This fee would go into a general standardization fund. Any deficit incurred by the Division would be distributed among the contracting manufacturers.

This plan was received with great interest at the meeting. It was decided that the outline be further studied and rewritten at a future meeting in São Paulo under the chairmanship of Dr Berlinck. A second conference would then follow in Rio to discuss the work completed and to make plans for the formation of a Division of Certification and Labeling.

To help the ABNT in this work the ASA has agreed to keep the Brazilian organization informed of the developments being made in the

(*Continued on page* 269)

Actions at Meetings in Brazil

Pan-American Group Nears Formation

ORGANIZATION of a Pan American Standards Committee with a broad program aimed to coordinate technical standards and terminology throughout the Americas "for the economic welfare of the nations" was brought to the point of final approval in two meetings in Brazil in July. The first, at São Paulo July 12, was attended by engineers representing 11 countries: Argentina, Brazil, Chile, Cuba, Ecuador, Mexico, Paraguay, Peru, Uruguay, Venezuela, and the United States. They agreed on the objectives of the proposed committee and set up a Provisory Committee to draft proposed "statutes" (a proposed constitution). M. E. Souza, General Electric Company, Rio de Janeiro, acted as representative of the American Standards Association on behalf of the United States.

The second meeting was held during the First Pan American Engineering Congress at Petropolis, Brazil, July 19. It adopted the proposed constitution ("statutes") for submittal to the national standardizing bodies of the participating countries for ratification. Of the 11 countries represented at the July 12 meeting, seven have organized standardizing associations:

Argentina—Argentine Institute for Rationalization of Materials
Brazil—Brazilian Association for Technical Standards
Chile—Institute of Technical Research and Standardization
Mexico—General Administration of Standardization
Peru—Department of Technical Standards of the Ministry for Development and Public Works
United States—American Standards Association
Uruguay—Uruguayan Institute of Technical Standards

The Pan American Standards Committee will come into formal existence only after ratification of the statutes by a majority of these organizations. So far as the United States is concerned, the proposals will be presented to the Annual Meeting of the American Standards Association in October.

According to the report of the July 19 meeting (received by the American Standards Association in Spanish and translated here), the objects of the Pan-American Standards Committee as stated in the proposed statutes would be:

(*a*) To promote understanding, on the part of the governments, industries, and the public in general, of the importance of standardization for scientific, industrial, and commercial progress, and consequently, for the economic welfare of the nations.

(*b*) To ensure that the standards bodies of the American countries issue, if possible, standards of particular interest to their cultural, technical, and commercial relations.

(*c*) To establish, as far as possible, uniformity of the standards of the American countries, such standards to be called Pan-American Standards and showing this designation, and having been adopted by all member countries of the Committee.

(*d*) To endeavor to make identical, and as far as possible equal, those symbols used in science and technology which have been internationally adopted.

(*e*) To promote the use of a uniform terminology in all American countries, ascertaining the equivalents of all terms used in the various languages, thus preparing a technical vocabulary in French, Spanish, and Portuguese, accepted in all American countries.

(*f*) To encourage the creation of standards organizations in those American countries which do not have such organizations.

(*g*) To stimulate cooperation between the standards bodies, encouraging the publication of standards by them.

(*h*) To orient its work, coordinating it, if possible, with that of ISO.

Under the proposed statutes, it is planned that the Committee will function under the auspices of the standards bodies of those countries that are members. It will have its headquarters in that country where the last meeting was held.

Memberships will be made up of

(*Continued on page* 274)

Brazilian Government Trade Bureau

São Paulo, Brazil's modern inland city, where engineers from 11 American countries met to plan new committee.

Schiesser, Switzerland, Named New President of the IEC

DR Max Schiesser, head of the Brown Boveri Company at Baden, Switzerland, and president of the Swiss Electrotechnical Institution since 1939, has been elected president of the International Electrotechnical Commission. Dr Schiesser succeeds E. Uytborek of Belgium. As president of the IEC he heads the international organization which has been responsible for correlating opinion on electrical problems in 25 member countries and is credited with bringing about a large degree of standardization and interchangeability in electrical products throughout the world. The IEC is now the electrical section of the International Organization for Standardization.

Dr Schiesser has been with the firm of Brown Boveri since 1901 except for a short period during which he worked in France and in the United States. He is credited with important contributions to the development of rotary converters, mercury arc rectifiers, and switchgear. In 1937 the Swiss Federal Institute of Technology at Zurich conferred upon him the degree of Doctor honoris causa for technical sciences.

The International Electrotechnical Commission was organized in 1906 to act as a permanent "world congress" on electrical problems. Opinion on international electrical problems is correlated in each of these member countries through a National Committee, which represents all sections of that country's electrical industry.

In this country the United States National Committee performs this function. This committee operates through the American Standards Association. Dr H. S. Osborne, chief engineer of the American Telephone and Telegraph Company, is the chairman of the committee; P. H. Chase, chief engineer of the Philadelphia Electric Company, and Frank Thornton, Jr, engineering manager, association activities, Westinghouse Electric Corporation are the vice-presidents; G. F. Hussey, Jr (Vice-Admiral, USN, Ret), secretary of the American Standards Association is the treasurer; and J. W. McNair of the ASA staff is secretary.

The countries that are members of the IEC are: Argentina, Australia, Austria, Belgium, Canada, China,

Czechoslovakia, Denmark, Egypt, Finland, France, Hungary, India, Italy, Netherlands, Norway, Poland, Portugal, Roumania, Sweden, Switzerland, United Kingdom, Union of South Africa, United States of America, Union of Soviet Socialist Republics.

The IEC was a direct outgrowth of several international Congresses of electrical engineers, each organized for the occasion and their programs having little continuity. At the first Congress, the International Electrical Congress held in 1881, names for the principal electrical units were definitely agreed upon. This Congress was a forerunner of later congresses held in 1893, 1896, 1900, and 1904.

At the Congress held in St. Louis in 1904, Colonel R. E. Crompton of Great Britain presented a paper on the Rating of Machinery, which raised the question of international agreements on rules for rating electrical machinery. Believing that a permanent organization would be helpful in bringing about better international understanding, the St. Louis Electrical Congress resolved that "steps should be taken to secure the cooperation of the technical societies of the world by the appointment of a representative Commission to consider the question of standardization of the Nomenclature and Ratings of Electrical Apparatus and Machinery."

Colonel Crompton made the necessary arrangements, and in June 1906 representatives of 12 countries met in London and organized the International Electrotechnical Commission. By 1908, 11 National Committees had been formed. The growth of the organization and recognition of its importance is shown in meetings held since 1926. In that year 120 delegates representing 18 nations met in New York; in the 1938 meetings over 400 delegates represented 22 countries; and in the recent meetings at Stresa, Italy, 160 delegates representing 14 countries were present.

Eminent Americans who have served as president of the International Electrotechnical Commission have included Elihu Thompson, C. O. Mailloux, and James Burke. The late A. E. Kennelly, who was Professor Emeritus of Engineering, Harvard University, was made honorary president in 1938 in recognition of his outstanding career in electrical engineering and of his work in promoting national as well as international standards.

Proposed Gear Standards Considered at Meeting

Standardization was given major emphasis at the thirty-third annual meeting of the American Gear Manufacturers Association June 6-8, 1949. In addition to a symposium, a number of standards in process were reported. These included tentative standards on application classification for enclosed gear drives, on output speeds, and on allowable loads and speeds. A tentative standard on allowable torsion and bending in shafting will soon become a final standard. A standard is being developed for inspection and lubrication of aircraft gas turbine gears; and the enclosed worm-gear inspection standard will soon be ready for proposal as an American Standard, it was reported.

In addition, limiting values for tooth form are being developed, as well as a tentative standard on single-thread hobs for helical gears. The design portion of the fine-pitch standard was cleared for submittal to the American Standards Association for consideration as an American Standard. Rolled fine-pitch worms for instruments will be the subject of a new tentative standard. Letter symbols will be added to the nomenclature and geometry standard as an appendix. The recommended practice for tooth proportions and pressure angles for straight bevel gears is to be revised to include only 20-degree pressure angle, instead of the 14½-, 17-, and 20-degree angles now shown, the reports indicated.

Unified Screw Thread Form Wins International Approval

THE possibility of setting up a single world system of screw threads was considered at meetings of Technical Committees ISO/TC 1 on Screw Threads and ISO/TC 49 on Thread Tolerances, of the International Organization for Standardization, held in Paris, June 28, 29, and 30. As a result, the basic thread form of the Unified Screw Thread System adopted by the United Kingdom, the United States, and Canada last year was recommended to the member countries of the ISO for adoption as the ISO Basic Profile for threads in metric, as well as inch units, with a pitch of one millimeter (about 0.04 inch) or greater. This profile, originally adopted at the Ottawa Conference in 1945, will thus become a world-wide standard.

Because the unification of the American and British thread systems in inch units has been finalized, the immediate problem before Committee ISO/TC 1 is the further development of a metric thread system, the committee decided. Such a metric thread system had been started before World War II under the procedure of the former International Standards Association (ISA). A scope of work unanimously adopted by ISO/TC 1 at the Paris Conference leaves the door open for the recognition of inch threads as well as metric threads, in future ISO recommendations.

A tentative program of work, adopted by ISO/TC 1, includes as its main items: (1) Threads with triangular profiles for bolts and nuts; (2) Constructional threads with triangular profiles; and (3) Threads with profiles other than triangular.

The United States and United Kingdom delegations agreed to recommend that their countries be represented on an ISO Working Commission to assist the Swedish Secretariat of ISO/TC 1 in developing the program of work. They also agreed to recommend that their industries assist those in charge of developing the ISO program by giving them the benefit of their experience.

Consideration was further given to Thread Tolerances, ISO/TC 49, a project for which the ISO secretariat is held by Switzerland. The British delegation accepted representation on a small ISO subcommittee to deal with this work. The United States delegation agreed to place information obtained in American practice at the disposal of this ISO subcommittee, if desired.

The United States delegation to the Paris meeting consisted of five members: George S. Case (Lamson and Sessions Company), Chairman; Irvin H. Fullmer (Interdepartmental Screw Thread Committee); W. H. Gourlie, (The Sheffield Corporation); R. F. Holmes (A. C. Spark Plug Division, General Motors Corporation) and John Gaillard (American Standards Association), Technical Secretary of the delegation.

A more detailed report on the results of the conference will be presented later.

CORRECTION

*It has been found that the second sentence in the second paragraph of the article "The Meetings of the ISO" (*STANDARDIZATION, *September 1949, page 225) calls for correction. This sentence should read as follows:*

"Perhaps the outstanding achievement in this field was the recommendation by ISO/TC 1, Screw Threads, that the basic profile of the Unified Screw Thread adopted in November 1948 by the United States, the United Kingdom, and Canada, be adopted as the common profile for metric as well as inch threads, for all pitches of 1 mm and greater."

Further details about the discussions on the question of screw thread standardization which took place at the ISO conference at Paris are given in the article above.

Certification and Labeling Planned

(*Continued from page 266*)

labeling work of this association.

Among the companies and Brazilian departments attending and participating in the discussions of this conference were the General Electric Company; the Administrative Department of Public Services (DASP); the Federal Purchasing Department (DFC); the National Department of Illumination & Gas (DNIG); the Brazilian Portland Cement Association; The Eletromar, Brazilian Electrotechnical Industry; the Belgian Metallurgical & Mining Company; and the Standards Electrical Company.

The work of this meeting is the latest development in the complex standardization organization of Brazil. The ABNT, organized in 1940 for the purpose of coordinating all standardizing work throughout Brazil, is composed of three general classes of members: corporate, official or semi-official institutions, and individual. The Directing Council is composed of 12 individual members (three representing producers, three representing consumers, three representing the laboratories and three representing the individual members as a group).

A long but clear-cut procedure is carried out by the ABNT in developing and adopting a standard. First, the Board of Directors appoints committees evenly composed of representatives of consumers, producers, and laboratories. Each committee then sponsors and promotes studies to be carried out by laboratories on the material or subject which is to be standardized. These studies are controlled by the committee, the work in many instances being actually done by one or more individual members of the committee.

After considering the work done by the laboratories as well as the standards of a similar nature of other countries, the committee prepares a draft of the proposed standard which is published and circulated to all members of ABNT for suggestions and criticism. The committee studies the comments received and makes a new draft, if necessary. When the final draft is ready, it is submitted to a general meeting for approval by members of the ABNT. To be approved the standard must receive two-thirds of the votes of the general meeting. The standard thus approved is published as a Brazilian Standard.

At the beginning of this year there were about 30 committees with assigned projects and the total membership was close to 300. These figures are indicative of the amount of

(*Continued on the next page*)

Book Reviews

Welding Metallurgy—Iron and Steel, 2nd revised edition. (American Welding Society, 33 West 39th Street, New York, N. Y., 505 pp., $2.50)

Dealing with the structure, properties, and the composition of welded materials, particularly that of steel, this book is intended to show how steel is affected by the varied conditions of heat and stress in welding, to explain heat treatment, and to show the way in which metallurgy can be used to control the welding process.

New information on the processes in inert-gas metal-arc welding and added facts on the metallurgy of specific materials, such as the stainless, heat-resisting, and stainless-clad steels, are included in this revision. The last edition was published in 1940.

Also included are a short bibliography at the end of each chapter to suggest further sources of information, an extensive index for reference purposes, and questions on each chapter at the end of the book

for use in schools or for home study.

The fundamentals of metallurgy are discussed in the first chapters for those having no previous knowledge of metallurgy, and the welding metallurgy of specific materials and the effect of different elements is handled in later chapters for both technical and non-technical readers.

Heating Ventilating Air Conditioning Guide. 1949 (American Society of Heating and Ventilating Engineers, 51 Madison Avenue, New York 10, N. Y., $7.50)

The 27th edition of the *Guide* again presents current engineering practice and up-to-date products of manufacturers. The technical data section of reference material on the design and specification of heating, ventilating, and air conditioning systems is based on investigations done by the Society's research laboratory, by cooperating institutions, and by members of the Society.

Improvements have been made in this edition wherever current engineering practice or recent published data have indicated progress or need for change in the presentation of the subject. The Technical Data Section, for instance, has been enlarged by 80 pages and the Catalog Data Section has been increased by the addition of products of many newly listed manufacturers.

There are eight chapters on: "Principles; human reaction to atmospheric environment; heating-cooling loads; combustion and consumption of fuels; heating systems and equipment; air conditioning; special applications and installation and testing codes.

The end of the book is devoted to the Catalog Data Section with indexes of advertisers, modern equipment, and Manufacturers Catalog Data.

The list of codes and standards applicable to heating, ventilating, and air conditioning practice has been enlarged so that it now includes 115 which are of importance to the practicing engineer in this field. Information is given on the latest available edition of each code, together with the address of the organization from which it may be obtained.

The International Temperature Scale of 1948. By H. F. Stimson. RP1962. (National Bureau of Standards. 9 pp. 10 cents. Available from the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C.)

The first revision of the International Temperature Scale since its adoption 21 years ago is described. The new scale is designed to conform as nearly as practicable to the thermodynamic centigrade scale as now known while incorporating certain refinements, based on experience, which make the scale more uniform and reproducible. A new value for the temperature of the silver point and the use of Planck's law with a new value for the radiation constant, c2, are the only changes having significant effects on numerical values assigned to temperatures.

Symposium on Magnetic Testing. 1949 Edition. (American Society for Testing Materials, 1916 Race Street, Philadelphia 3, Pa., $2.50)

The purpose of this symposium is to indicate certain of the problems encountered in magnetic testing and to outline some of the methods that have been devised to overcome them. This 204-page publication which includes ten technical papers by leading experts in their fields covers some of the new advances in magnetic testing and analysis.

Symposium on Functional Tests for Ball Bearing Greases. 1949 Edition. (American Society for Testing Materials, 1916 Race Street, Philadelphia 3, Pa., $1.75)

The functional methods used for testing greases and the significance of their results are covered in the five papers and numerous discussions included in this symposium. Sponsored by Technical Committee G on Lubricating Greases of ASTM Committee D-2 on Petroleum Products and Lubricants, the symposium has attempted to develop and standardize further the acceptable methods and procedures for performance evaluation of ball-bearing greases.

Representing a variety of interests, the authors include a grease manufacturer, a machinery manufacturer, an industrial user of greases, an association of aircraft manufacturers, and a military user of greases. As a whole the 104-page symposium presents a picture of the present status of functional testing of ball-bearing greases.

ASRE Data Book. 6th Edition. (American Society of Refrigerating Engineers, 40 West 40th Street, New York 18, N. Y., $7.00)

Practically all of the text has been rewritten in this sixth edition, and the amount of tabular material has been greatly extended to supply the latest data on refrigeration operation and design factors. New psychrometric charts developed for the ASRE and covering an extensive range from low to high temperatures are included, along with complete discussions of their use and application to air conditioning and refrigeration. Many charts dealing with the newer refrigerants, particularly the Freon family, are also included.

In addition to engineering analyses of refrigerating equipment ranging from domestic units to large size centrifugals, new compilations of data on insulation, insulating materials, and heat transfer coefficients have been made. In an effort to make the listings authentic and comprehensive, the refrigeration classified section of this book has also been completely revised to include listings of all items of materials, components, and accessories concerned with refrigeration and air conditioning.

Over 900 pages of information, 233 tables, 362 illustrations, four inserts, a glossary and index make this volume a complete handbook of refrigeration and air conditioning.

Toxic Eye Hazards. 1949 Edition. (The National Society for the Prevention of Blindness, Inc., 1790 Broadway, New York 19, N. Y., $1.00)

Prepared by the Joint Committee on Industrial Ophthalmology of the American

Certification. Labeling Planned

(*Continued from page 269*)

work being done and the importance attached to it by official and business interests. Not only is the ABNT active in domestic standardization work, but it has also continued to take an active part in the work of the International Organization for Standardization of which it is a charter member.

Considering the industrial output of São Paulo, the manufacturing center of Brazil, the ABNT established a branch office in that city in March 1942. This branch and the main ABNT organization try to work closely with other important standardizing bodies active in Brazil today.

Among these organizations is the Institute of Technological Research of São Paulo (IPT), formed about 1930. This body was the first to undertake technical standardization in Brazil. Although concerned primarily with the interests and requirements of the State of São Paulo, much of its work has received national recognition and often serves as the basis for national standards. It has one of the best equipped materials-testing laboratories in South America.

Another important Brazilian standardizing body is the Electrotechnical Institute, created in 1940, which has developed intensive research work in the field of electricity. It has contributed much to the establishment of present standards for electrical installations and devices.

Medical Association and the American Academy of Ophthalmology and Otolaryngology, this manual deals with effects of various chemicals on the eyes and with safeguards against chemicals now used in industrial processes. Types of protective equipment best suited for specific hazards and a standard program for eye safety from chemical exposure are covered in sections of the book contributed by experts in the fields of industrial opthalmology and safety engineering. These recommendations are based on actual studies of conditions in a chemical manufacturing center in the country.

In addition to many charts and illustrations, the manual contains a comprehensive list of references for additional reading. This book is designed both for laymen and professional personnel and will be useful to anyone dealing with industrial eye injuries and problems of protection.

Chemical Safety Data Sheet Chlorosulfonic Acid. 1949 Edition. (Manufacturing Chemists' Association, Inc., 246 Woodward Building, Washington 5, D. C., 20¢.)

In providing essential information for safe handling and use, this 16-page manual deals with the properties, the usual shipping methods, the unloading and emptying, the storage, handling, and waste disposal of chlorosulfonic acid. Health hazards involving the use of this acid and safety measures to be taken to avoid injuries from it are discussed in detail.

Symposium on Aging of Rubbers. March 1949 Edition. (American Society for Testing Materials, 1916 Race Street, Philadelphia 3, Pa., $1.75)

The various methods for accelerating aging of natural rubber and synthetic elastomers are reviewed in six extensive papers by leading authorities in the field in this symposium sponsored by a special symposium committee of ASTM Committee D-11 on Rubber and Rubber-like Materials. These tests aid in predicting the life expectancy of finished articles. This 76-page pamphlet is intended to bring out the latest information by leaders in their fields.

Symposium on Industrial Gear Lubricants. (American Society for Testing Materials, 1916 Race Street, Philadelphia 3, Pa., 75c)

This pamphlet, containing three technical papers, is the result of a symposium arranged by Committee D-2 on Petroleum Products and Lubricants to provide data on the properties of industrial gear lubricants which may need to be investigated in connection with the establishment of test methods, nomenclature, and specifications.

Heavy duty gear oils, gear lubricants used in steel plants, and gear set servicing by the cathode ray oscilloscope are discussed in the articles of this 24-page book.

ASTM Specifications for Rolled Structural Steel. May 1949 Edition. (American Society for Testing Materials, 1916 Race Street, Philadelphia 3, Pa., $1.00)

This 34-page booklet includes ten ASTM tentative specifications for rolled structural steel, covering specifications for the general requirements for delivery of rolled steel plates, shapes, and bars for structural use; steel for bridges and buildings; structural silicon steel; structural steel for locomotives and cars; structural steel for ships; structural rivet steel; high-strength structural rivet steel; low-alloy structural steel; low and intermediate tensile strength carbon-steel plates of structural quality; and low and intermediate tensile strength carbon-silicon steel plates for machine parts and general construction.

The general requirements for delivery of plates, shapes, and bars, A 6, incorporates much of the material common to the several individual structural specifications. The establishment of this new specification for general requirements is considered very significant, and its application and development will be watched with much interest, not only in the steel industry, but by a number of the other ASTM technical groups, the ASTM reports.

SAE Handbook. 1949 Edition. (Society of Automotive Engineers, Inc., 29 West 39th Street, New York 18, N. Y., $10.00)

This 933-page book, the official publication of the SAE, contains the current SAE standards and recommended practices of the Society, except those specifically for aeronautical use. Thirty-one new automotive standards and specifications are included in this volume.

The ten sections listed in the book deal with aeronautical materials, parts, and codes; processed materials; fabricated materials; screws, bolts, and washers; tests, ratings, and codes; transportation and maintenance; tools and production equipment; nomenclature, tolerances, conversions; and miscellaneous information such as a partial list of American Standards and the general index. Some of the American Standards listed have been sponsored by the SAE and all of them are of special interest to the automotive industry.

Supplement to Screw-Thread Standards for Federal Services 1944. 1949 Edition. (U. S. Government Printing Office, Washington 25, D. C., 25¢)

Changes in American screw thread standards adopted by the Interdepartmental Screw Thread Committee of the Federal Government since the publication of the 1944 edition of the Handbook H28 are contained in this Supplement. It puts into effect for the use of government departments the additions and revisions completed up to June 15 as a result of the American - British - Canadian unification agreement.

"An extensive revision of the 1944 edition of Handbook H28, Screw Thread Standards for Federal Services, is in process, contingent on international standardization and the development of screw-thread standards, pipe-thread standards, and screw, bolt, and nut standards by Sectional Committees B1, B2, and B18 of the American Standards Association. On account of the uncompleted status of much of this work, publication of a revised edition of Handbook H28 is being deferred," it is declared in the foreword of this book.

Changes are given for sections of the Handbook dealing with American National form of thread: American National thread series; screw threads of special diameters, pitches, and lengths of engagement; American Standard pipe threads, miscellaneous standardized product threads of American National form or American Standard pipe-thread form, and acme threads. Included in the Supplement is an extensive appendix which contains descriptive material, charts, and tables of the Unified Screw Thread Standards jointly agreed upon by the United States, Great Britain, and Canada.

Comfort Air Conditioning, Part IV. 5th Edition. (Heating, Piping & Air Conditioning Contractors National Association, Suite 1401, 1250 Avenue of Americas, New York 20, N. Y., $1.00)

This 61-page booklet, which is essentially a compilation of proven data from authoritative sources, contains a code of minimum requirements for comfort air conditioning. It is not intended to be applied to industrial air conditioning.

Besides 16 tables which are listed in the main body of the pamphlet, there is a section on psychrometics and a psychrometric chart of normal temperatures in color. The appendix contains useful data for air conditioning design, pipe sizes for refrigeration, and fan laws.

Electricians' Pocket Companion, by Benjamin Goldberg (Murray Hill Books, Inc., 232 Madison Avenue, New York 16, $2.50)

This 442-page book is intended to give practical information and specific data on the application side of the electrical field. Information is given on Code requirements, methods of work, safety precautions, and emergency first-aid treatment. It is illustrated with wiring diagrams, tabular matter, and some photos.

New Procedure for Naming ASA Correlating Committee Officers Recently Adopted

A regular procedure for naming officers of correlating committees has been made an official part of the ASA By-Laws. A nominating committee is to be appointed by the chairman of the correlating committee not later than November 1 of each year. Nominations may be made by petition as well as by the nominating committee. Ballots are to be mailed to the committee members within 10 days and on the day preceding the first meeting of the committee after the first of the year (but not later than January 15) the ballot is to be declared closed. Candidates receiving a plurality of the ballots received are to be elected.

A member of the ASA staff is to serve as secretary of each correlating committee without a vote.

Correlating committees are the general committees that have supervision and responsibility for the work of sectional committees in specific fields. They can initiate projects, approve personnel of sectional committees (subject to review of the Standards Council), and recommend standards to the Standards Council or Board of Review for final approval.

Standards From Other Countries

MEMBERS of the American Standards Association may borrow from the ASA Library copies of any of the following standards recently received from other countries. Orders may also be sent to the country of origin through the ASA office. The titles of the standards are given here in English, but the documents themselves are in the language of the country from which they were received.

For the convenience of our readers, the standards are listed under their general UDC classifications.

001.4 Terminology in Clockwork

Japan

Standard Terms in Alarm and Pendulum Clockwork, JES 3610, -3611

532 Mechanics of Fluids. Hydraulics

Germany

Water Levels. Specifications, DIN 7292

551.5 Meteorology

Poland

Atmosphere. Definitions, PN L-02001

621.3 Electrical Engineering

Mexico

Screw-In and Cartridge-Type Fuses and Replacement Elements, DGN J9-1949

Poland

Copper and Aluminum Electric Cables, PN E6

Sweden

Insulating Oils, SEN 14-01 to 14-07
Addition to 1938 Standard for Incandescent Lamps, SEN 23
Rules and Protective Apparatus for Starters, Controllers, Etc. of Electric Power Industry, SEN 5
Glossary of Terms Used in Electric Power Industry, SEN 42
Definition of Terms Relative to Relays, SEN 43

United Kingdom

Capacitors for Intrinsically-Safe Circuits, BS 1551-1949
Thermostats for Electrically-Heated Domestic Hot Water Supply (AC only), BS 1555-1949
Electric Immersion Heaters for Domestic Hot Water Supply, BS 1556-1949
Polythene-Insulated Cables Sheather With Polyvinyl Chloride (P.V.C.) Or Lead Alloy, BS 1557-1949

621.6 Apparatus for Conveyance and Storage of Gases and Liquids. Conduits and Pumps

Germany

Cast Iron Flanged Pipes, DIN 2422
Flanges for Various Pressures, DIN 2501 through 2504
Types of Welds for But-Welded Pipes, DIN 2559
Loose Flanges, Slip-On Type, DIN 2642, 2652/3, 2655/6
Stop Cocks for NP 10, DIN 3470
Smooth Flanges. Soldering or Welding Type, DIN 2572/3
Smooth Flanges. Grooved Type for Rolling-In Pipes, DIN 2574/5
Welding Neck Flanges, DIN 2630-2636

Poland

Nominal Diameters of Pipes, PN H-02651
Threaded Steel Pipes, PN H-74202
Seamless Steel Pipes, Plain and Selected, PN H-74210/1
Pipe Flanges, PN H-74323; 74370/1/2
Malleable Iron Pipe Fittings, PN H-74391-74437
Pipe Fittings, Technical Specification, PN M-74001

Sweden

Seamless Steel Pipes for Dairy Use, NP 6 atm (Revised), SMS 429
Various Kinds of Valves, Taps, Etc. For, SMS 1082-1086
Nominal Pressure 12.5 atm, SMS 1089-1095

621.7 Workshop Practice

France

Seamless Steel Pipes, Cold Drawn, Dimensions, EN R990-50
Seamless Steel Pipes, Cold Drawn, Tolerances, EN R990-51

Germany

ISA Tolerance System, DIN 7151 Bl.1, 2
ISA Tolerance System, DIN 7153
DIN-Fits, Shafts and Holes, Table of Nominal Deviations, DIN 2061
Plug Gage for Whitworth Thread, DIN 2298

622 Mining

Germany

Miner's Hatchet, DIN 20115
Steel Adjustable Stemples, DIN 21561
Mining Ventilation Conduit, DIN 21611
Mining Shafts, Dimensions, Construction, DIN 21350
Bricketing Moulds, DIN 23102
Pipes and Flanges for Compressed Air Lines, DIN 20002
Miner's Shovels, DIN 20120
Bricket-Pressing Plunger, DIN 23104

624 Civil Engineering

France

Metal Roofing in Zinc, NF P34-402/3
Eaves Troughs and Fittings in Zinc, NF P 36-402 through 36-406

Japan

Various Test Methods of Aggregates, JES 1102-1105
Wooden School Building, JES 1302/3
Asbesto-Cement Pipes, JES 7202

Mexico

Reinforced Concrete Sewer Pipes, DGN C20-1947

Poland

Brick and Stone Walls, Static Computation, PN B-182/3
Concrete and Reinforced Concrete Works, PN B-196
Hydraulic Cement, PN B-208
Hollow Bricks, PN B-304
Concrete Pipes, PN B-309
Fence Build-Up of Reinforced Concrete Sections, PN B-317
Curb Stones, PN B-351
Crushed Stones, PN B-363
Pine Lumber, PN B-443
Cement for Laying Wooden Floor, PN B-624
Ceramic Sewer Pipes, PN B-1500-1507

Sweden

Stair Cases, Handrails, Etc., SIS 60 00 01 through 60 00 06

United Kingdom

Wood Door Frames and Linings, BS 1567-1949

625.1/.6 Railways and Tramways

France

Railroad Material. Air Scoups and Aerators, NF F01-040
Railroad Material. Heating Line Coupling for Nominal Voltage=3000 v, NF F13-003
Screw-Rivet, Round Headed, NF F20-027
Railroad Fixed Installations. Signal for Petards, Pulleys and Guides for Funicular Railways, Etc., NF F54-002 through F54-008
Railroad Fixed Installations. Rail Lifting Jacks, NF F76-028
Miscellaneous Transport Equipment Wedges for Barrels and Cars, NF F78-001

Japan

Carbon Steel Rails, Fishplates, Bolts and Nuts, UES 1101-1107

629.12 Ships and Shipbuilding

France

Handles for Operating Latches, NF J31-460
Speaking Tubes, Joints and Branching, NF J45-910
Speaking Tubes, Bridge and Partition Bushings, NF J45-912
Speaking Tubes, Bell, NF J45-915
Speaking Tubes, Mouthpiece, NF J45-917
Speaking Tubes, Whistle, NF J45-920
Speaking Tubes, Special Call-Tubing, Mouthpiece and Whistles, NF J45-925
Speaking Tubes, Draining Plug, NF J45-927

Japan

Sounding Pipes, JES 3309/10
Caulking Tools, Mallets, Paint Scrapers, JES 3701, -3703/4, 3706, 3711-3714

631.3 Agricultural Tools and Machinery

Germany

Material Specifications for Agricultural Tools, DIN 11100

Sweden

Conduit for Conveyor Fan, SIS 35 95 01
Spring Tooth for Harrows (Revised), SIS 35 32 22 through 35 32 25

632 Protection of Plants

France

Products Used in Agriculture. Copper Sulfate, NF U43-005

645 Furniture

France

Wooden Furniture—Beechwood and White-

wood. Minimum Specifications, NF D60-303
Children's Furniture. Minimum Specifications, NF D60-304

658.28 Equipment for Service

Union of Soviet Socialist Republics

Shelving and Cupboards for Food Products. Types and Basic Documents, GOST 4101-48
Wooden Pallets for Food Products. Types and Basic Dimensions, GOST 4102-48
Counters for Grocery Stores. Types and Dimensions, GOST 4131-48
Cupboards for Grocery Stores. Types and Dimensions, GOST 4132-48

66 Chemical Industry

France

Fats. Oleic Acid, Industrial, NF T63-001
Fats, Stearic Acid, Industrial, NF T63-002

Japan

Various Chemical Compounds such as Zinc White, Lead White, Red Oxide or Iron, Barium Sulfate, Phosphorus, Trisulfate, Boric Acid, Borax, Etc., JES 1001; 1003; 1005/6; 1008-1015
Fire-Proof Paint, JES 5501

Mexico

Sodium Sulfate for Tannery's Use, DGN K38-1948
Aluminum Sulfate, Industrial, DGN K39-1948
Acetic Acid, DGN K40-1948

Poland

Dry Pigments. General Test Methods, PN C-04201
Copper Sulfate, PN C-23014
Glycerine, Raw, PN C-24002
Glycerine, Pharmaceutical, PN C-24004
Washing Soap, PN C-77001
Aluminum Pigment, PN C-81008
Cinnabar, PN C-81013
Iron Oxyde, Red, PN C-81020
Superphosphate, PN C-87001

665.5 Mineral Oils

Poland

Flash Point Tests, PN C-04007/8
Cloud and Pour Point Tests, PN C-04017/8
Drop Point. Softening Point Tests, PN C-04020/1/2
Conradson Method for Determination of Carbon Residue, PN C-04075
Determination of the Presence of Foreign Solid Matter, PN C-04089
Determination of Sulfur Content, Bomb and Lamp Methods, PN C-04091/2
Determination of Demulsification Number of Turbin Oil, PN C-04095
Determination of Paraffin Content, PN C-04109
Determination of Ductility of Asphalt, PN C-04132
Loss on Heating of Asphalt, PN C-04138
Determination of Salt Content, PN C-04147

669 Metallurgy

France

Chemical Analysis of Iron and Silicon Alloys. Contents of Tungsten, NF A06-210
Hot-Rolled Metallurgical Products: Round Bars, NF A45-002
Hot-Rolled Metallurgical Products: Hexagon Bars, NF A45-030
Hot-Rolled Metallurgical Products: Billets, Flattened and Semiflattened, NF A43-103

Poland

Analysis of Cast Iron, Iron, Steel. Cobalt Content, PN H-04021
Analysis of Iron Ore. Copper Content, PN H-04113
Steel Pipes. Threaded, Light, PN H-74200
Steel Pipes. Heavy, PN H-74201
Bars for Concrete Reinforcement, PN H-93215

Sweden

Quality of Hard Metals. Range of Use. Methods of Representation, SMS 955
Metal Tape for Electric Resistors. Dimensions, SIS 12 09 01
Round Wire for Electric Resistors. Dimensions, SIS 12 50 01
Steel for Forging, SIS 14 12 10
Chain Steel, SIS 14 12 25/6
Steel for Rivets, SIS 14 12 45; 14 13 45
Steel for Screws and Bolts, SIS 14 13 25
Case Hardening Heels, SIS 14 13 70; 14 25 10; 14 25 14/15; 14 25 20
Spring Steels, SIS 14 17 70; 14 20 90; 14 22 30/31
Tempering Steels, SIS 14 21 20; 14 22 25; 14 25 30; 14 25 32; 14 25 34; 14 25 36
Nitrided Steels, SIS 14 22 40; 14 29 40
Stainless Steels, SIS 14 23 02-04; 14 23 20-24; 14 23 30 34; 14 23 40-43; 14 23 60-61
Round Bars for Reinforced Concrete (Revised), SIS 12 11 01
Steel for General Construction (Revised), SIS 14 13 11; 14 14 11
Steels for Pressure Vessels (Revised), SIS 14 13 30; 14 14 30; 14 21 12

United Kingdom

Silver Anodes and silver salts for electroplating, BS 1561-1949
Fushion Welded Steel Air Receivers, BS 487-1949
Trolley and Contact Wire for Electric Traction, BS 23-1949
Nickel and Nickel Alloy. Hot-Rolled Sheet and Cold-Rolled Sheet and Strip for General Purposes, BS 1525-27-1949

672 Articles of Iron and Steel

Germany

Multiple-Bushing Roller Chain, DIN 8171
Chains for Apron Conveyors, DIN 8175

Union of Soviet Socialist Republics

Rotating Air Cylinders and Their Flanges, GOST 3151-46

675 Leather Industry

Germany

Herfeld Test for Water-Proofing, DIN 53333

Mexico

Terms Used in Tannery Industry, DGN I 4-1948
Vegetable Tanned Soles for Footwear, DGN I 5-1949

677 Textile Industry

Germany

Nomenclature of Various Operations in Jute Spinning Process, DIN 60013

India

Method for Determining Shrinkage of Cotton and Linen Cloth on Washing, IS:9

Japan

Combs, Cards, Spools, Pickers, JES 5142/3, 6502, 6504, -6508/9
Garnett Wire for Cotton Card (Revised), JES 5134

The Netherlands

Determination of Wool Contents in Textile Mixed Fabrics. Sulfuric Acid Method, N 1233
Determination of Wool Contents in Textile Mixed Fabrics. Carbonizing Methods, N 1234

Sweden

General Rules for Testing Textiles, SIS 65 00 01
Determination of Shrinkage of Woolen Fabrics, SIS 65 00 02
Determination of Shrinkage on Laundering of Woven Fabrics, SIS 65 00 03
Determination of Degree of Imperviousness of Water of Woven Fabrics, SIS 65 00 06

681 Fine Mechanisms. Clocks and Watches. Musical Instruments

Germany

Countersunk-Head Screws for Watches, DIN 8246
Soft Metal Inserts for Stamping (Weighing Machines), DIN 1932
Weigh-Bridges, DIN 1926, B1.2
Cattle Weighing Scales, DIN 1928

Japan

Large and Small Size Microscopes (Revised), JES 7132T, 7134T
Contour Indicator, Lens Measuring Indicator, JES 3202/3

Union of Soviet Socialist Republics

Clocks, Mechanical, GOST 2784-44

697 Heating and Ventilating

Poland

Standard Temperature Inside Various Living and Working Premises, Warehouses, Etc., PN B102
Central Heating Boilers, PN B111

Union of Soviet Socialist Republics

Stove Heating System. Fire Hazard Prevention, GOST 4058-48

744 Technical Drawings

The Netherlands

Technical Drawings. Furniture Drawing, N 916

Poland

Technical Drawings. Architectural Symbols, PN B-131
Technical Drawings. Dimensioning, PN B-133

Sweden

Drawings. Graphical Symbols for Surface Finish, SMS 672

77 Photography

Canada

Projection Rooms and Lenses for Motion Picture Theatres, CSA 27.1.21

Japan

Straight Threaded Tip of Shutter Cable Release, JES 7105
Lens Aperture Marking, JES 7106

Union of Soviet Socialist Republics

Photographic Cameras. Scale of Shutter Speed, GOST 3268-46

News Briefs

• • The International Committee on the Study of Air announces that scientists from both sides of the ocean met May 12 at the University of Pennsylvania to continue their progress toward "national and international acceptance of basic formulas and tables of properties of mixtures of air and water vapor." The group is known as the International Joint Committee on Psychrometric Data. Chairman is Dr Baldwin M. Woods, director of University Extension, University of California. He is a past president of the American Society of Heating and Ventilating Engineers, which was responsible for organization of the Joint Committee.

• • The Japanese Standards Committee has changed its name to the Japanese Industrial Standards Committee.

• • Referring to the Westinghouse Electric Corporation's all-time record of $970,673,847 of electrical products shipped during 1948, Gwilym A. Price, the Corporation's president, said in his annual report:

"Helping to make possible this production record was the increasing acceptance of standardization of turbines and generators by the utility industry and industrial customers. Westinghouse early took an active part in promoting and engineering this standardization, which has enabled power companies to speed the construction of new and expanded generating stations and meet the unprecedented demand for electricity."

• • The first inter-American Safety Congress is scheduled for November 14-17 in Havana, Cuba. The Congress is sponsored by the Inter-American Safety Council in cooperation with the Cuban Safety Council for the Prevention of Accidents. The 18 sessions will cover: Petroleum—production and refining; care and use of safety equipment; small plant manufacturing; cane field and sugar centrals; breweries; public utilities—gas; public utilities—electrical; public utilities—telephone; first aid and hospital; mining; cement and quarries; silicosis control; transportation—air; transportation—railroads; transportation—steamships; school safety; home safety; street and highway safety.

• • "Quality Control as a Safeguard to Purchasing" is the title of an essay published in the *Philadelphia Purchasor*, May 1949. The essay, by Robert W. Thompson, Westinghouse Electric Corporation (Steam Division), was awarded first prize in a competition conducted by the Educational Committee of the Purchasing Agents' Association, Inc.

• • In a reorganization of the national standards association of Hungary, Institute de Normalisation de Hongrie, M. Jean Duzs, Magyar Szabvanyugyi Intezet, recently took office as director. M. Duzs explains in announcing his appointment that the government of Hungary is taking an active interest in the success of the standardization program. As director of the Institute M. Duzs is hoping for closer cooperation with the American Standards Association than has been possible at any time in the past.

• • The Manufacturers Standardization Society of the Valve and Fittings Industry announces publication of a new standard, Stainless Steel

Pan-American Group

(*Continued from page* 267)

active and associate members, the active members being one representative standards organization from each participating country. Technical, industrial, scientific, and commercial organizations which maintain useful activities for one or more American countries and which are "oriented towards objects that are in harmony with the institutions forming the Committee" may become Associate Members. They will, however, have no vote.

The Committee is to meet at least once in three years. It may adopt resolutions in regard to texts of standards or parts of standards recommending adoption by each country if circumstances permit.

The standards bodies which are members of the Committee will have three specific obligations: (1) To distribute among the member bodies copies of their approved or recommended standards as soon as they are published; (2) To answer, as soon as possible, the questions submitted to them by the Council or by the members of the Committee; (3) To take part in study commissions which the Council decides to appoint.

An Executive Council, responsible for administration of the Committee, is to be appointed by the director of the national association which is representative of the country in which the Committee has its seat. In addition to its administrative functions, the Council will have the task of establishing commissions for the study of all material relating to the standards that are under discussion by the Committee and of distributing the conclusions reached.

The Committee will start to function as soon as the Provisional Commission has been confirmed by the majority of the standards organizations which participated in the July 19 meeting. The seat of this first Committee will be in Rio de Janeiro.

Castings for Valves, Flanges, and Pipe Fittings, SP-41-1949, to cover the need for stainless steel castings comparable to the American Iron and Steel Institute's standard for wrought materials being used in stainless steel piping.

• • The American Institute of Electrical Engineers reports that all its standards publications are now being issued in the new, larger size (8½ x 11 in.) recently adopted by the American Standards Association. When new standards, test codes, and reports are issued, or current ones reprinted, they will be issued in this larger size, the AIEE announces. In addition a larger and more modern binder is being made available to accommodate AIEE standards in the new size.

• • The American Institute of Bolt, Nut, and Rivet Manufacturers changed its name, effective July 1, to the Industrial Fasteners Institute.

• • The national standardizing body of Portugal (Reparticao de Normalizacao) became a member of the International Organization for Standardization early this year.

• • A Spanish edition of the ASTM Standard Methods of Testing and Analysis of Products Derived from Petroleum and Bituminous Substances has been issued in Argentina by Direccion General de Yacimientos Petroliferos Fiscales. The new 540-page volume is the result of work begun in 1946. Eighty-one ASTM test methods are included, in line with ASTM requirements through 1947. All measurements have been expressed in the metric system.

• • Non-members are invited to participate in the fall meeting of the American Society for Testing Materials Committee D-14 on Adhesives to be held in Philadelphia, October 17 and 18.

• • For those interested in the use of color for safety (STANDARDIZATION, July 1949, page 176), we are calling attention to the extensive and fascinating discussion "How to Use More Color in the Shop" in the June issue of *American Machinist*. The feature is a special report by *American Machinist* to the metalworking industries.

• • Charles H. Goddard of the Sylvania Electric Products, Inc, was recently elected president of the Illuminating Engineering Society.

Other officers elected are Vice-President, S. G. Hibben of the Westinghouse Electric Corporation; Treasurer, E. M. Strong of Cornell University; General Secretary, A. H. Manwaring of the Philadelphia Electrical & Manufacturing Co; Directors: Duncan M. Jones of the Curtis Lighting of Canada Ltd, and R. L. Biesele Jr, of Southern Methodist University.

• • The United States Testing Company announces the opening of a cotton fiber testing and textile testing branch in Memphis, Tennessee, September 1. Memphis has been selected in view of its importance as a cotton merchandising and growing center.

Tests for fiber strength, fiber fineness, and fiber uniformity will be made. Many spinning mills are now using such data to predict accurately spinning characteristics, waste, neppiness, and strength of the finished yarn, the company explains. These tests are also being used in the selection of the proper type of cotton for a particular yarn.

Samples of Hydrocarbon Compounds now Available

A total of 162 compounds now available as standard samples of hydrocarbons for calibrating analytical instruments and apparatus in the research, development, and analytical laboratories of the petroleum, rubber, chemical, and allied industries, have been prepared by the National Bureau of Standards and the American Petroleum Institute.

Instructions for transferring standard samples of hydrocarbons "in vacuum" are available on request. A complete list of NBS standard samples of hydrocarbons, together with instructions for ordering, may also be obtained from the National Bureau of Standards, Washington 25, D. C.

• • Aluminum braces now being made up from interchangeable mass-produced parts are expected to be a boon to the millions of orthopedic patients in the United States. In the past, orthopedic braces have been largely custom-made for individual patients. Now trained fitters will be able quickly to assemble custom-made braces from stock mass-produced components made up from aluminum forgings, tubing, and screw-machine parts. Thus individual parts can be replaced without the user having to buy a new assembly.

• • Norman F. Harriman, formerly vice chairman of the Federal Specifications Executive Committee, died June 30, 1949. Mr Harriman was also associated with the National Bureau of Standards for a number of years.

• • Representative Melvin Price of Illinois has urged Congress to pass mine safety legislation calling for penalties against operators who fail to comply with Federal inspectors' recommendations. At the present time Federal inspectors make recommendations for the elimination of mine hazards, and the enforcement of the recommendations is left to state officials. Congress is considering bills to give the Bureau of Mines the authority to do the enforcing.

• • High-purity standard samples of organic sulfur compounds can now be obtained by interested laboratories of the petroleum, chemical, and allied industries from the National Bureau of Standards. These compounds are prepared, under the sponsorship of the American Petroleum Institute, by the Bureau of Mines of the U. S. Department of Interior where they are used for the measurement of needed physical, thermodynamic, and spectral properties. A portion of each compound is set aside to provide standard samples for calibration of analytical instruments and apparatus in research, development, and analytical laboratories.

• • A project on 2½-in. hose couplings was recently initiated in a Canadian Standards Association Committee handling this subject. A survey of fire-fighting equipment in Canada has revealed a deplorable situation in respect to interchangeability of hose equipment between municipalities, the Association reports. There is practically no provision for mutual aid between the larger industrial areas of Canada in fighting fires.

The seriousness of this situation is stressed in the fact that the Co-ordinator of Civil Defence, Major-General F. F. Worthington, has volunteered to be chairman of this new CSA committee. In response to requests by the CSA to representative interests throughout Canada, the full co-operation of interested manufacturers, the Dominion Fire Prevention Association, the Association of Canadian Fire Marshals, the Dominion Association of Fire Chiefs, Government Departments, and the Insurance Underwriters, has been assured.

Of great importance to Canadian standardization work is the recent

clarification of the respective scopes of the Canadian Standards Association and the Canadian Government Specifications Board. This has been achieved through a recently adopted working agreement between these two bodies. The Canadian Government Specifications Board will undertake work only on the request of governmental agencies. It will refer to the Canadian Standards Association proposed projects of general public interest. The CSA will be responsible for the specification needs of industry. Both organizations will consult together when technical committees are to be formed.

• • The Standards Association of Australia is the first of the national standardizing bodies of the world to undertake work on standards for dental materials. The Association has issued three draft specifications in this series for public review.

• • The American Conference of Governmental Industrial Hygienists has requested that the ASA initiate a project on *A Guide for Uniform Industrial Hygiene Codes or Regulations*. The conference has suggested that a Guide which it has developed be used as that basis for this work; the ACGIH has also offered to act as sponsor for such a project.

• • Hoping to solve the problems of all-weather flying, the Air Force, Navy, and civil aviation agencies have agreed on a standardized landing approach lighting system for all air ports in the country.

One effect of the program, which is the outcome of more than two years of experimentation, will be the installation of a "slope line" lighting system at the instrument-landing runway at Idlewild Airport in New York. This lighting system has been adopted as the standard for both military and civil use.

The installation of the "slope line" lighting system derives its name from the fact that its 60 component units, set 100 ft. apart in rows of 30 at either side of the approach path to the runway consist of narrow, rectangular "light boxes," containing ten 250-watt bulbs each, placed at right angles to the landing plane's line of flight and inclined upward at an angle of 45 degrees.

• • In conforming to the proposals made by an American Standards Association committee, the catalog service division of the McGraw-Hill Publishing Company, New York, announces adoption of a new standard page trim size of 8½ x 11 in. This size eliminates the manufacturers' problem of preparing special copy to fit former McGraw-Hill page specifications which were 8⅛ x 11 in. The Special Committee on Sizes of American Standards and Vendors Catalogs has not as yet made formal recommendations on sizes of vendors catalogs but informal surveys have shown an overwhelming majority in favor of the 8½ x 11 in. size.

• • William H. Deacy, Sr., staff architect of the American Standards Association, has won first, fourth, and fifth prize in a national competition of the National Monument Builders Association. The competition was for the best design for a low cost memorial and is of special interest because this is the first time that the American Institute of Architects has approved the competition.

• • Continuance of voluntary labeling of manufactured products, rather than government grading, has been advocated by the U. S. Chamber of Commerce in a communication to the Senate Interstate and Foreign Commerce Committee, according to an announcement by *Business Action*, August 5. The Senate Committee is considering legislative proposals for mandatory labeling of fiber, fur, and cotton products.

In its letter to the Senate Committee, the Chamber said in fact:

"There should be a full examination of the possibilities of the trade practice conference procedure by each industry desirous of raising the level of its competitive standards, in order that it may properly evaluate the benefits which this method offers under the conditions confronting the industry involved.

"Nothing should be done through official action to affect the good will established by producers for their goods by addition of any attempt at governmental grading or other such designation.

"Under existing practices where voluntary labeling is used, the manufacturer and distributor make every effort to give the consumer maximum useful information regarding the product covered."

• • The Refrigeration Industry Safety Advisory Committee has announced the appointment of Cyrus W. Miller as full-time secretary and safety code consultant, with offices at 155 East 44th Street, New York City.

The committee is sponsored jointly by representative groups of manufacturers of air conditioning and refrigeration equipment, including the Air Conditioning and Refrigerating Machinery Association, the Refrigeration Equipment Manufacturers Association, the National Electrical Manufacturers Asociation, and the Compressed Gas Manufacturers Association. Its purpose is to encourage the adoption of uniform safety practices and regulations with respect to refrigeration equipment and, in particular, the nationwide acceptance of the

"Just what do we mean by the 'Philosophy of Specification?' In brief, a specification may be defined as a group of maximum and minimum values of measurements of different characteristics which determine the use requirements of a given product. In setting up a specification, it is necessary that we use the elements of philosophy; for example, we must have knowledge of the product and of methods of measuring its essential characteristics; we must give due thought to the value of the specification in determining the use of the product; we must think logically at every stage of its preparation and application; and we must employ wisdom and judgment over and above the numerical data accumulated from experiment and experience. Certainly, the use of a specification as between seller and buyer involves the 'facts and principles of reality, and of human nature and conduct.'"—L. S. Reid; W. R. Willets: Philosophy of Specifications. ASTM Bulletin, *January, 1949.*

American Standard Safety Code for Mechanical Refrigeration, B9 (sponsored by the American Society of Refrigerating Engineers), revision of which is now in progress.

• • Mechanical equipment, of necessity, increases the fire and safety hazards in the modern home, it is pointed out in an article, titled "Aspects of Fire and Safety in Relation to Space Planning for Mechanical Equipment in Houses," published in Technical Bulletin No. 9 of the Housing and Home Finance Agency. The article discusses minimum space requirements necessary for the safe installation of the various types of equipment commonly used in houses and which may become hazardous if space is improperly limited.

The codes and standards governing space requirements are given in the article, along with typical requirements for both tested and untested apparatus.

Economy at the cost of hazard is a poor bargain, the article points out, while wasted space is an unnecessary burden on the cost of construction.

• • Recent investigations at the National Bureau of Standards have shown the way to accurate measurement of the wear that occurs on machine parts where various automotive gear lubricants are tested under simulated service conditions. The new test uses apparatus designed originally by the Society of Automotive Engineers for testing load-carrying capacity of gear lubricants under fixed high speed and shock loading. Modifications have been made to adapt the machine for evaluating the effect of lubricants on wear at high torque and under low-speed operation. With this equipment it is possible to detect any significant difference in the performance of lubricants that meet the requirements of the same specifications, according to the reports.

Of the various laboratory testing machines commonly used, the SAE machine more nearly simulates gear operation, the Bureau reports.

The machine is particularly adaptable to wear tests because the test specimens are of such size and shape that accurate indications of wear may be obtained by determination of loss in weight.

The lubricants used in the investigations were SAE 90 grade and included a Navy contract 1080 mineral oil, five lubricants conforming to U.S. Army Specifications 2-105B, five lubricants conforming to Federal Specification VV-L-761, and one lead-soap active-sulfur lubricant.

• • A symposium on color was included for the first time in the program of the annual National Technical Conference of the Illuminating Engineering Society held at French Lick, Indiana, from September 19 to 23. This 1949 conference, the only official assembly of all the membership of the IES for the dissemination and discussion of information concerning the art and science of illumination, included technical program of 32 papers.

• • Dr Lal Verman, director of the Indian Standards Institution, has been elected vice-president of the International Organization for Standardization to succeed the late Gustave L. Gerard.

• • Reorganization within the New Zealand Department of Industries and Commerce has resulted in the formation of a new Standards and Technical Division, with R. T. Wright as director. L. J. McDonald remains in direct charge of the standards program as part of the work of the new Division.

• • Two international committees have now scheduled fall and spring meetings. Technical Committee IEC/AC 31, Flameproof Enclosures, will meet at Paris November 16-18, 1949. Technical Committee ISO/TC 27, Solid Mineral Fuels (Coal, Coke), will meet at London, March 1950.

ASA President Given Honorary Doctorate

On June 10 Thomas D. Jolly, president of the American Standards Association, was awarded the honorary degree of Doctor of Engineering by Rensselaer Polytechnic Institute in Troy, N. Y.

Mr Jolly is vice-president in charge of engineering and purchases for the Aluminum Company of America. He joined ALCOA in 1915 as a draftsman in the New Kensington works, later becoming master mechanic and Superintendent of Maintenance. He was elected vice-president of ALCOA in 1942 after he had served as Chief Engineer and Director of Purchases for five years.

Mr Jolly was named an adviser to the Hoover Commission studying government reorganization in 1948. He is a member of the American Society of Mechanical Engineers and Past President of the National Association of Purchasing Agents.

Internationally Speaking

National committees of the International Electrotechnical Commission have been asked to consider whether the International Annealed Copper Standard, IEC Publication No. 28, should be changed in view of adoption by the General Conference and the International Committee on Weights and Measures of the absolute ohm in place of the "International" ohm. The absolute ohm is 10^9 units of resistance in the cgs electromagnetic system, which is also the unit of resistance in the mks electromagnetic system. The absolute ohm has been found to be smaller than the International ohm by approximately 0.05 percent and this change in units is such as to cause an increase by the same percentage in the actual conductivity called for by a specified numerical value. The United States National Committee has recommended to the IEC that the ohm in IEC Publication No. 28 hereafter be considered as the absolute ohm and not the "International" ohm.

Solid Mineral Fuels (ISO/TC 27)—

Shall the ASA participate in the work of ISO Technical Committee 27 on Solid Mineral Fuels? This is the question now before the Mining Standardization Correlating Committee.

The technical committee was organized by the ISO in continuation of work in this field formerly under way in the old International Standards Association. The British Standards Institution holds the secretariat of this ISO project and has defined the project's purpose. It is to coordinate such standards for solid mineral fuels as are required for the purpose of international trade, including standard methods of sampling and testing which might be the basis for testing the efficiency of coal and coke consuming devices.

The American Society for Testing Materials has indicated that the participation of the ASA in this ISO project is desirable.

Pallets (ISO/TC/51)—

The Standards Association of Australia, which has the secretariat for this international project, is making a study of the use and design of pallets in other countries and has asked for information from the United States. The request has been sent to organizations concerned. The SAA hopes to collect typical practices of major industries.

Iron and Steel (ISO/TC 17)—

The question of whether the ASA should participate in the work of the ISO Technical Committee 17 on Iron and Steel is being voted on by letter ballot of the ASA Board of Examination.

Eighteen countries are participating through their standards bodies in the work of this committee which has dealt largely with harmonizing and unifying methods of testing of iron and steel. This committee, for which the British Standards Institutions holds the secretariat, is authorized by the International Organization for Standardization (ISO) as a continuation of the former ISA Committee 17 under the ISA.

ASA STANDARDS ACTIVITIES

Status as of September 1, 1949

American Standards Approved Since August 1, 1949

Plain Washers, B27.2-1949

Sponsors: American Society of Mechanical Engineers; Society of Automotive Engineers

Stainless Steel Pipe, B36.19-1949

Sponsors: American Society of Mechanical Engineers; American Society of Testing Materials

Safety Code for Rubber Mills and Calenders, B28.1-1949 (Revision of B28a-1927)

Sponsor: National Safety Council

National Electrical Code, C1a-1949

Sponsor: National Fire Protection Association

Electron Tube Bases, Caps and Terminals (RMA Standard ET-130-A; NEMA Publication, 500-A), C60.1-1949

Dimensional Characteristics of Electron Tubes (RMA Standard ET-105-A; NEMA Publication 502-A), C60.2-1949

Dimensional Characteristics of Gaskets for Water-Cooled Transmitting Tubes (RMA Standard ET-104; NEMA Publication 501-A), C60.3-1949

Sponsor: Joint Electron Tube Engineering Council

Addenda to American Standard Approval Requirements for Domestic Gas Ranges, Z21.1-1949 (Revision of Z21.1-1948)

American Standard Listing Requirements on Gas Hose for Portable Gas Appliances, Z21.2-1949 (Formerly American Standard Listing Requirements for Flexible Gas Tubing, Z21.2-1938)

American Standard Approval Requirements for Domestic Gas-Fired Incinerators, Z21.6-1949 (Formerly American Standard A.G.A. Approval Requirements for Incinerators, Z21.6-1932)

Addenda to American Standard Approval Requirements for Hot Plates and Laundry Stoves, Z21.9-1949 (Revision of Z21.9-1948)

American Standard Approval Requirements for Gas Water Heaters, Z21.10-1949 and Addenda (Revision of Z21.10-1944 and Addenda Z21.10-1945)

American Standard Approval Requirements for Gas-Fired Room Heaters, Z21.11-1949 (Formerly American Standard Approval Requirements for Gas Space Heaters, Z21.11-1948)

Addenda to American Standard Listing Requirements for Gas Valves, Z21.15-1949 (Revision of Z21.15-1944)

Sponsor: American Gas Association

35-mm Cutting and Perforating Negative Raw Stock, Z22.34-1949 (Revision of Z22.34-1944)

Sponsor: Society of Motion Picture Engineers

Dimensions for Professional Portrait and Commercial Sheet Film (Centimeter Sizes), Z38.1.29-1949 (Revision of Z38.1.29-1944)

Sheet Film Processing Tanks, Z38.8.15-1949

Specifications for Lantern Slide Projectors, Z38.7.14-1949 (Revision of Z38.7.14-1944)

Sponsor: Optical Society of America

American Standards Being Considered for Approval

By the Board of Review—

Nomenclature, Definitions, and Letter Symbols for Screw Threads, B1.7

Sponsor: Society of Automotive Engineers; American Society of Mechanical Engineers

By the Board of Examination—

Specifications for Zinc Yellow (Zinc Chromate) (Revision of ASTM D478-47; ASA K50.1-1947)

Specifications for Raw Linseed Oil (Revision of ASTM D234-28; ASA K34-1937)

Specifications for Boiled Linseed Oil (Revision of ASTM D260-33; ASA K35-1937)

Specifications for Slab Zinc (Revision of ASTM B6-48; ASA H24.1-1948)

Sponsor: American Society for Testing Materials

By the Electrical Standards Committee—

Vulcanized Fibre, C59.20 (Revision of C59.20-1945)

Sponsor: American Society for Testing Materials

By the Consumer Goods Committee—

Definitions of Terms Relating to Textile Materials, (Revision of ASTM D123-48; ASA L14.12-1949)

Methods of Test for Asbestos Yarns (Revision of ASTM D299-48T; ASA L14.18-1949)

Methods of Test for Woolen Yarns (Revision of ASTM D403-48T; ASA L14.21-1949)

Methods of Test for Worsted Yarns (Revision of ASTM D404-48T; ASA L14.22-1949)

Methods of Testing and Tolerances for Jute Rope and Plied Yarns for Electrical Packing Purposes (Revision of ASTM D681-48; ASA L14.44-1949)

Sponsor: American Society for Testing Materials

Household Automatic Electric Storage Type Water Heaters, C72

Sponsor: National Electrical Manufacturers Association

By the Mechanical Standards Committee—

Gaging Practices for Ball and Roller Bearings, B3.4

Sponsor: Mechanical Standards Committee

T-Slots, Their Bolts, Nuts, Tongues, and Cutters, B5.1 (Revision of B5.1-1941)

Sponsors: American Society of Mechanical Engineers; Metal Cutting Tool Institute; National Machine Tool Builders' Association; Society of Automotive Engineers

Standards Submitted

Methods of Sampling and Chemical Analysis of Alkaline Detergents (Revision of ASTM D501-46; ASA K60.21-1948)

Sponsor: American Society for Testing Materials

Method of Rating and Testing Refrigerant Expansion Valves, B60

Recommended Practice for Mechanical Refrigeration Installations on Shipboard, B59

Approval Requested by: American Society of Refrigerating Engineers

American Standards Withdrawn

Approval Requirements for Private Garage Heaters, Z21.4-1932

Approval Requirements for Gas Heated Ironers, Z21.7-1932

Approval Requirements for Industrial Gas Boilers, Z21.14-1934

Listing Requirements for Low Water Cut-Off Devices, Z21.36-1945

Requested by: American Gas Association

Recommended Practice for Engineering Nomenclature for Motion Picture Theaters, Z22.30-1941

Recommended Practice for Sensitometry of Motion Picture Film, Z22.26-1941

Projector Sprockets for 16-Mm Motion Picture Film, Z22.6-1941

8-Tooth Projector Sprockets for 8-Mm Motion Picture Film, Z22.18-1941

Requested by: Society of Motion Picture Engineers

Withdrawal of American War Standards Being Considered

Specification for Projection Equipment, Sound Motion Picture 16-Mm, Class 1 (JAN-P-49), Z52.1-1944

Specification for Test Film for Checking Adjustment of 16-Mm Sound Motion Picture Projection Equipment, Z52.2-1944

Specification for 16-Mm Motion Picture Release Prints (JAN-P-55), Z52.3-1944

Method of Determining Picture Unsteadiness of 16-Mm Sound Motion Picture Projectors, Z52.6-1944

Method of Determining Uniformity of Scanning Beam Illumination of 16-Mm Sound Motion Picture Projectors, Z52.7-1944

Leaders, Cues, and Trailers for 16-Mm Sound Motion Picture Release Prints Made from 35-Mm Preprint Material, Z52.19-1944

Leaders and Trailers for 16-Mm Sound Motion Picture Release Prints Made from 16-Mm Original Material, Z52.31-1945

Whiteness of Projection Screens (Semi-Diffusing Reflecting Surface), Z52.45-1945

Brightness Characteristic of Projection Screens (Semi-Diffusing Reflecting Surface), Z52.46-1945

Picture and Sound Synchronization Marks for 35-Mm and 16-Mm Sound Motion Picture Release Negatives and Other Preprint Material, Z52.53-1945

Direct Finder Aperture for 35-Mm Motion Picture Cameras, Z52.68-1946

Auxiliary Finder Aperture for 35-Mm Motion Picture Cameras, Z52.69-1945

Specification for Registration Distance and Lens Mounting Dimensions for 35-Mm Motion Picture Cameras, Z52.70-1945

Requested by: Society of Motion Picture Engineers

What's Happening on Projects

Standards for Safety in the Construction Industry, A10—

Sponsors: American Institute of Architects; National Safety Council

A revision of its Accident Prevention Manual has been submitted by the Associated General Contractors of America to the ASA for approval as an American Standard. This new manual, which would be a revision of American Standard Manual of accident Prevention in Construction, A10.1-1939, will be distributed to all members of the A10 Sectional Committee for action as soon as enough printed copies are available.

Code for Pressure Piping, B31—

Sponsor: American Society of Mechanical Engineers

The Sectional Committee on the Code for Pressure Piping has been reorganized under the chairmanship of F. S. G. Williams of the Taylor Forge & Pipe Works, New York, with Sabin Crocker, Ebasco Services, Inc, 2 Rector Street, New York, as vice-chairman, and Lester W. Benoit, Manufacturers Standardization Society of the Valve and Fittings Industry, New York, as secretary.

The present Code for Pressure Piping, with Supplement No. 2, as approved by the American Standards Association on April 7, 1947, is up for consideration and for revision.

Section 5, covering refrigeration piping systems of the Code for Pressure Piping, is up for revision under the chairmanship of A. C. Buensod, New York.

In both the present American Standard Code for Pressure Piping, B31-1947, and in the American Standard Safety Code for Mechanical Refrigeration, B9-1939 (now being revised) Refrigerant piping is included.

It is, therefore, only natural that there should be close coordination between these two codes, as obviously the piping requirements should be the same for each of the codes, the American Society of Mechanical Engineers, sponsor, points out. There is an indication that is quite general among the committee members that the Code for Pressure Piping should contain the refrigerant piping and be the basis for piping that is to be used in the B9 Safety Code for Mechanical Refrigeration.

"Because of the wide interest that has been displayed in the revision of both of these codes, the committee members for each of the codes wish to obtain all the help and comments possible from the various segments of the industry, including producers, suppliers, contractors, and users. Mr Buensod, the chairman of the refrigeration piping section of the Pressure Code for Piping, wishes to enlist the support of all of the above segments and any suggestions made will receive due consideration."

The subcommittee on refrigeration piping of the B31 committee will consist of approximately 10 voting, working members. The scheme of reorganization of the sectional committee also permits appointment of corresponding members, who may sit in on all meetings. "Such corresponding members do not have a vote but by correspondence can submit very valuable contributions in the way of comments so that the members of the committee may have the best advice from the entire industry," the ASME declares.

Mr Buensod would gladly consider the names of men in the industry who wish to participate in the work of the subcommittee on refrigeration piping.

Small Tools and Machine Tool Elements, B5—

Sponsors: Metal Cutting Tool Institute; Society of Automotive Engineers; National Machine Tool Builders' Association; American Society of Mechanical Engineers

Milling Cutters—A proposed new edition of the American Standard originally approved in 1930 is being circulated by the American Society of Mechanical Engineers, administrative sponsors. The revision is intended to enlarge the scope of the standard and increase its usefulness in the light of developments in cutter design, tool materials, and machine improvement, since 1930. The new edition has also been brought into harmony with the American Standard on Machine Tapers, B5.10-1943.

Copies of the tentative draft can be obtained from S. A. Tucker, Standards Manager, American Society of Mechanical Engineers, 29 West 39th Street, New York 18, N. Y.

Involute Serrations—Copies of a proposed new American Standard on involute serrations can also be obtained from Mr Tucker for comment. This is intended to provide a 45-deg involute serration standard to replace an old SAE standard. The range of teeth used in the proposed new standard provides diameters both smaller and larger than the old standard, with the result that there is a much greater selection of sizes. In addition, the American Society of Mechanical Engineers explains that the introduction of allowable errors and effective fits into the involute spline standard has made necessary the same procedure for the involute serrations. These have been incorporated as Table 13. New tables have been included giving basic measurements between and over pins for use in calculating fits, as well as new tables giving the maximum tooth space and the minimum tooth thickness.

Method of Test for Accelerated Aging of Vulcanized Rubber by the Oxygen-Pressure Method, (ASTM D 572-48; J4.1-1949)—

Method of Test for Accelerated Aging of Vulcanized Rubber by the Oven Method, (ASTM D573-48; J5.1-1949)—

Proprietary Sponsor: American Society for Testing Materials

Revisions adopted in earlier editions of these two standards consist of changing the 48-hr limit for rest periods after aging and before determination of the physical properties to read "96 hr." This change will not materially affect the test results and will provide greater flexibility in ordinary routine control testing, particularly over week-ends.

These two standards were developed under the jurisdiction of ASTM Committee D-11 on Rubber and Rubber-like Materials.

Power Switchgear, C37—

Sponsor: Electrical Standards Committee

A proposed revision of American Standard for Relays Associated with Power Switchgear, C37.1-1937, titled "American Standard for Relays Associated with Electric Power Apparatus" has been submitted to the ASA by the American Institute of Electrical Engineers. This submittal has been referred to the C37 Sectional Committee for its consideration and recommendation.

Standardization in the Field of Photography, Z38—

Sponsor: Optical Society of America

The recently approved American Standard Specifications for Lantern Slide Projectors, Z38.7.14-1949, a revision of the American Standard, Z38.7.14-1944, adds information about the dimensional requirements for slide carriers. This will insure that properly made slides will fit in the carriers and will protect the manufacturer from users' complaints, even though unjustified when attempts are made to use overthick or nonstandard materials.

A note in the new standard points out the difference in thickness between British and American 2 x 2-in. slides. The British allow a slightly thicker slide ($^{9}/_{64}$ in. instead of $^{1}/_{8}$ in.). No basic reason was found for this by the subcommittee. While it was not within the subcommittee's province to require that American projectors accept the thicker slides, they did believe that the standard should recommend that the carriers should accept slides of both thicknesses.

Recommendations are also included for the uniformity of screen illumination, corner-to-center ratio for illumination, focal lengths for objectives for both 2 x 2-in. and 3¼ x 4-in. projectors, maximum temperature reached by the slide, and minimizing stray light.

Transmission Chains and Sprockets, B29—

Sponsors: American Gear Manufacturers Association; American Society of Mechanical Engineers; Society of Automotive Engineers, Inc

The sectional committee, which has just been reorganized, is considering the standard, Precision Steel Transmission Roller Chain, Sprockets, and Cutters, adopted by the Association of Roller and Silent Chain Manufacturers, as a proposed revision of American Standard Roller Chains, Sprockets and Cutters, B29a-1930.

CORRECTION

To our regret a typographical error which crept into the August issue of STANDARDIZATION, page 221, shows "Institute of American Engineers" as the sponsor for the project on Radio, C16.

For many years the sponsor for this important project has, of course, been the Institute of Radio Engineers.

New American Standards Available

B5.14-1949 Reamers $1.00

This revised edition of American Standard B5.14-1941 contains various types, designs, and general dimensions of arbors and reamers together with the magnitude and direction of the tolerances for the dimensions of the several elements. (*Sponsors:* Metal Cutting Tool Institute; Society of Automotive Engineers; National Machine Tool Builders' Association; American Society of Mechanical Engineers)

G8.2-1949 Zinc-Coated (Galvanized) Iron or Steel Sheets, Specifications for (ASTM A93-48T) ..... .25

These specifications cover sheets zinc-coated (galvanized) by the hot-dip process. (*Sponsor:* American Society for Testing Materials)

H26.1-1949 Copper Pipe, Standard Sizes, Specifications for (ASTM B42-47) ..... .25

Seamless copper pipe in all standard pipe sizes, both regular and extra-strong, suitable for use in plumbing, boiler feed lines, and for similar purposes are covered in these specifications. (*Sponsor:* American Society for Testing Materials)

H27.1-1949 Red Brass Pipe, Standard Sizes, Specifications for (ASTM B43-47). .25

This standard has to do with seamless red brass pipe in all standard pipe sizes, both regular and extra-strong, suitable for use in plumbing, boiler feed lines, and for similar purposes. (*Sponsor:* American Society for Testing Materials)

H28.1-1949 Bronze Castings in the Rough for Locomotive Wearing Parts, Specifications for (ASTM B66-46) ..... .25

Four compositions of bronze castings in the rough for locomotive wearing parts and the purposes for which these compositions are ordinarily used are given in these specifications. (*Sponsor:* American Society for Testing Materials)

H29.1-1949 Car and Tender Journal Bearings, Lined, Specifications for (ASTM B67-46) ..... .25

This standard covers lined journal bearings for use on locomotive tenders, passenger cars, and freight equipment cars. (*Sponsor:* American Society for Testing Materials)

H30.1-1949 Copper-Silicon Alloy Wire for General Purposes, Specifications for (ASTM B99-47) ..... .25

Round, hexagonal, and octagonal copper-silicon alloy wire for general structural purposes except for electrical transmission cable are covered in these specifications. (*Sponsor:* American Society for Testing Materials)

H31.1-1949 Rolled Copper-Alloy Bearing and Expansion Plates and Sheets for Bridge and Other Structural Uses, Specifications for (ASTM B100-47) ..... .25

These specifications cover rolled copper-alloy plates and sheets for use in bridges and other structures for fixed or expansion bearings where motion is slow and intermittent and pressure does not exceed 3000 psi. (*Sponsor:* American Society for Testing Materials)

H33.1-1949 Leaded Red Brass (Hardware Bronze) Rods, Bars, and Shapes, Specifications for (ASTM B140-47) ..... .25

Two types of leaded red brass (hardware bronze) rods, bars, and shapes suitable for screw machine work; namely, types A and B, are discussed in this standard. (*Sponsor:* American Society for Testing Materials)

K60.4-1949 White Floating Toilet Soap, Specifications for (ASTM D499-48) ..... .25

K60.6-1949 Milled Toilet Soap, Specifications for (ASTM D455-48) ..... .25

K60.8-1949 Compound Chip Soap (With Rosin), Specifications for (ASTM D690-48). .25

General requirements, chemical composition, and basis of purchase for soaps are covered in these specifications. (*Sponsor:* American Society for Testing Materials)

Z10.5-1949 Letter Symbols for Electrical Quantities ..... .60

General principles of letter symbol standardization, typographical standards for letter symbols, and letter symbols for the magnitudes of electrical quantities are given in this standard. (*Sponsors:* American Association for the Advancement of Science; American Institute of Electrical Engineers; American Society of Civil Engineers; American Society for Engineering Education; American Society of Mechanical Engineers)

Z11.3-1949 Cone Penetration of Lubricating Grease, Method of Test for (ASTM D217-48) ..... .25

Three test procedures for the empirical estimation of the consistency of lubricating greases by measurement of the extent of penetration of a standard cone are covered in these specifications. (*Sponsor:* American Society for Testing Materials)

Z11.56-1949 Chemical Analysis for Metals in Lubricating Oils, Methods of (ASTM D811-48) ..... .25

This standard gives methods of chemical analysis intended for the determination of barium, tin, silica, zinc, aluminum, calcium, magnesium, and sodium and potassium in new and used lubricating oils. (*Sponsor:* American Society for Testing Materials)

Z11.57-1949 Sulfated Residue, Lead, Iron, and Copper in New and Used Lubricating Oils, Methods of Test for (ASTM D810-48) ..... .25

Methods intended for the determination of sulfated residue, lead, iron, and copper in new and used lubricating oils are covered in this standard. (*Sponsor:* American Society for Testing Materials)

Z11.58-1949 Sediment in Fuel Oil by Extraction, Method of Test for (ASTM D473-48) .25

This standard gives a method of test for the determination of sediment in fuel oils by extraction with industrial 90 benzene. (*Sponsor:* American Society for Testing Materials)

Z32.2.2-1949 Graphical Symbols for Plumbing... .40

This standard, one of a group which will ultimately replace the present American Standard Graphical Symbols for Use on Drawings in Mechanical Engineering, Z32.2-1941, replaces pages 3 through 5 of Z32.2-1941. (*Sponsors:* American Institute of Electrical Engineers; American Society of Mechanical Engineers)

Z38.1.29-1949 Professional Portrait and Commercial Sheet Film (Centimeter Sizes), Dimensions for ..... .25

Z38.8.23-1949 X-Ray Sheet Film Hangers (Clip Type) ..... .25

Two standards, the first of which is a revision of American Standard Z38.1.29-1944, are of importance in the photographic field. (*Sponsor:* Optical Society of America)